

AD-A098 569

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
14819AT LANCE. MISSILE NUMBER 4243, ROUND NUMBER 361-APT, 19 FE--ETC(U)  
FEB 81

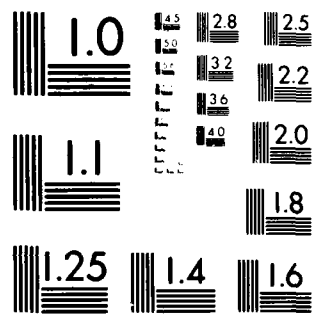
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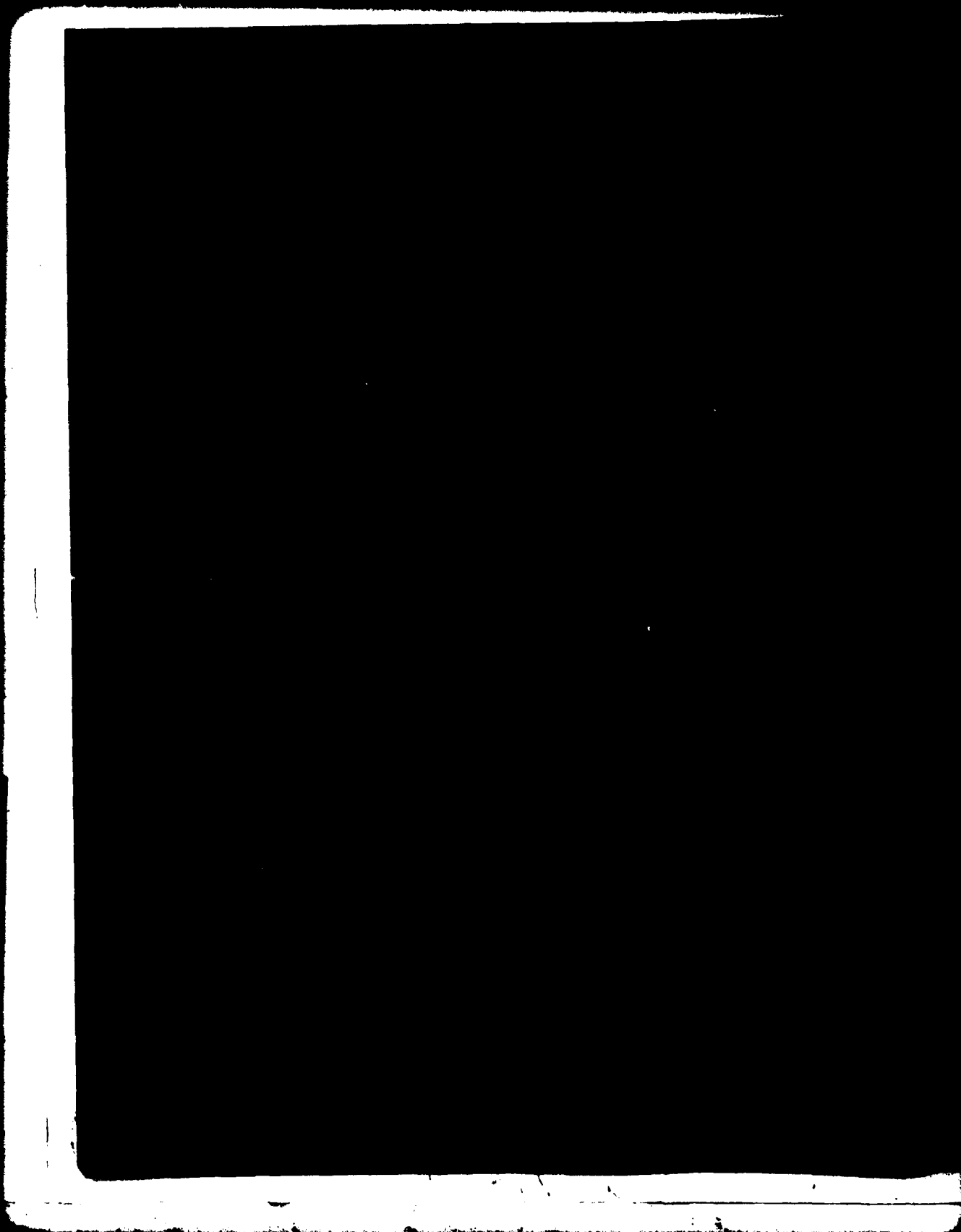
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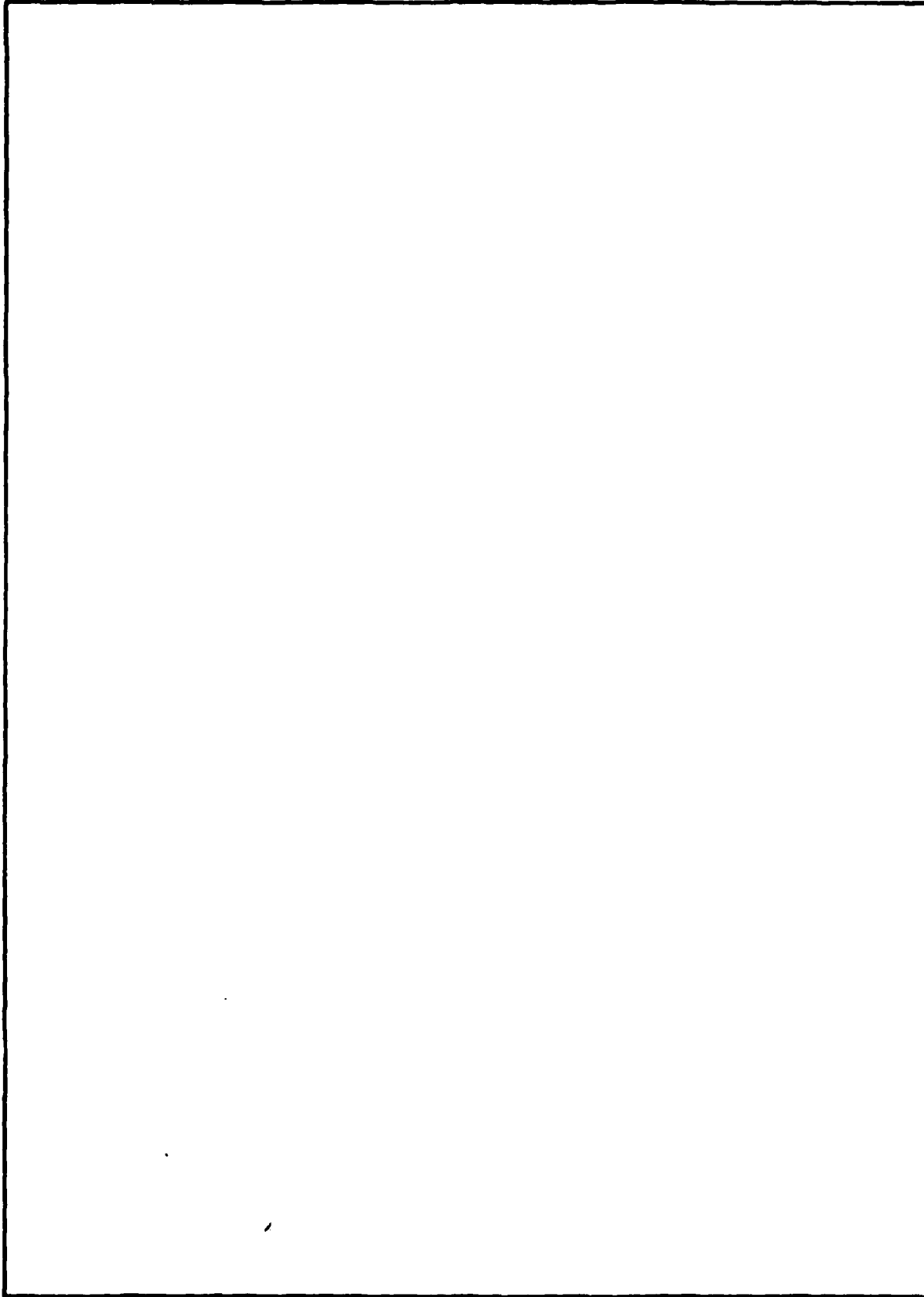
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|---|--|---|
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| 4. TITLE (and Subtitle)<br>14819AT LANCE<br>Missile Number 4243<br>Round Number 361-APT   | 5. TYPE OF REPORT & PERIOD COVERED<br>9) Meteorological data rept. |   |
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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Meteorological data gathered for the launching of the 14819AT LANCE, Missile Number 4243, Round Number 361-APT, presented in tabular form. |  |   |

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## INTRODUCTION

14819AT LANCE, Missile Number 4243, Round Number 361-APT,  
was launched from LC-39, White Sands Missile Range (WSMR), New  
Mexico, at 1100 MST on 19 FEB 1981. The scheduled launch time  
was 1100 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

## 1. Observations

## a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-39 met site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

## b. Upper Air

(1) Low level wind data were obtained from Single Theodolite observation at:

SITE AND ALTITUDE

LC-39 2760 Meters

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME

|     |          |
|-----|----------|
| WSD | 1050 MST |
| SMR | 1000 MST |
| HMN | 1050 MST |

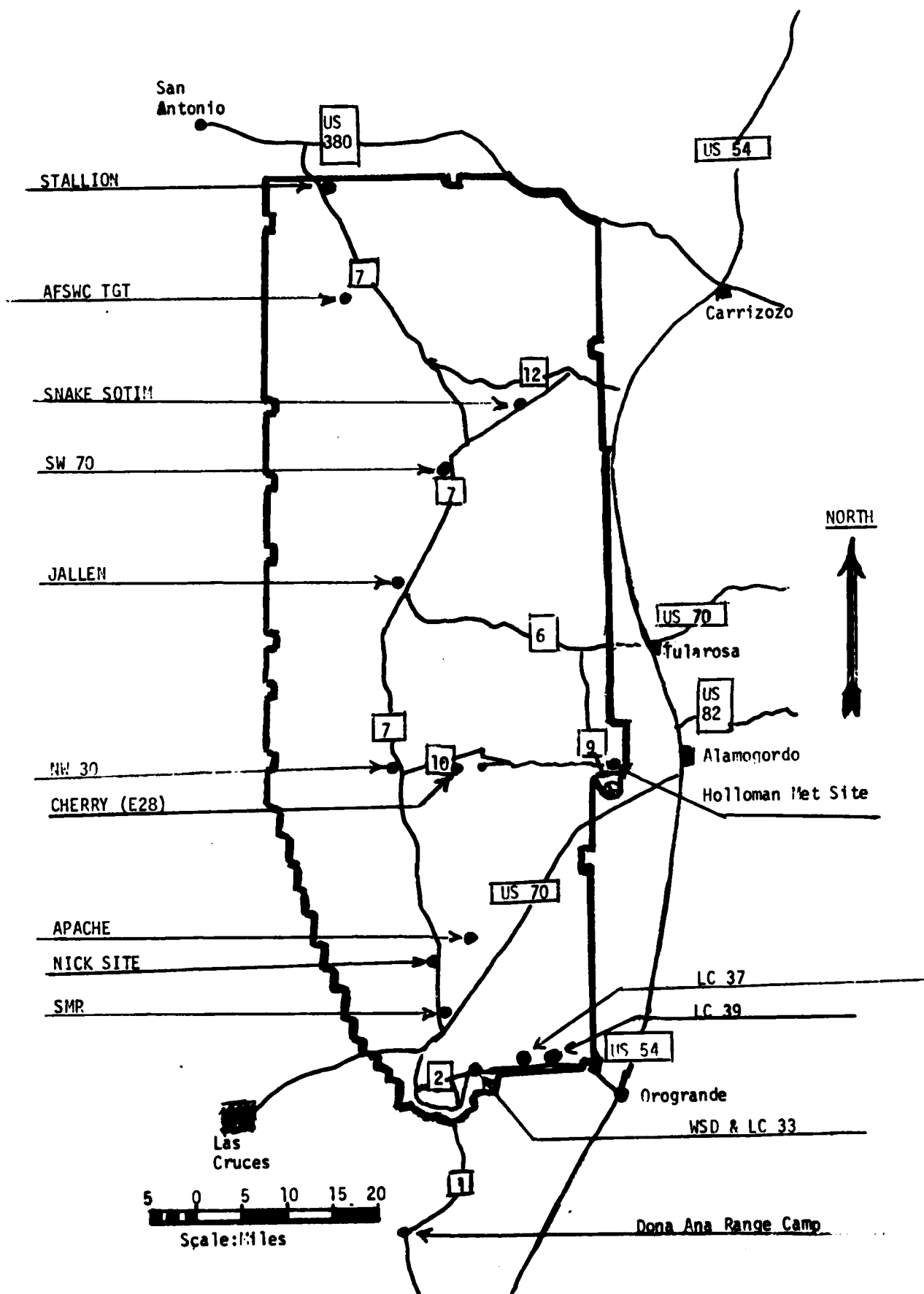


TABLE 1. Surface Observation taken at 1100 MST,  
19 February 1981, at LC-39, 14819AT LANCE,  
Missile Number 4243, Round Number 361-APT.

|                   |         |                   |
|-------------------|---------|-------------------|
| ELEVATION         | 4063.75 | FT/MSL            |
| PRESSURE          | 885.2   | MBS               |
| TEMPERATURE       | 70.0 °F |                   |
| RELATIVE HUMIDITY | 22      | %                 |
| DEW POINT         | 29.6 °F |                   |
| DENSITY           | 1044    | GM/M <sup>3</sup> |
| WIND SPEED        | 00      | KTS               |
| WIND DIRECTION    | 000     | DEGREES           |
| CLOUD COVER       | CLEAR   |                   |

## PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM LC-39

DATE 19 FEB 1981

TIME 1050 MST

COORDINATES (WSTM)

$$X = \underline{530.938.82}$$

Y = 186,564,96

$$H = 4063.75$$

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL X OR FEET AGL .

| HEIGHT<br>AGL | DIRECTION<br>DEGREES | SPEED<br>KTS |
|---------------|----------------------|--------------|
| sfc           | 039                  | 03           |
| 60            | 032                  | 03           |
| 120           | 025                  | 03           |
| 180           | 017                  | 03           |
| 240           | 009                  | 03           |
| 300           | 002                  | 03           |
| 360           | 353                  | 03           |
| 420           | 339                  | 03           |
| 480           | 326                  | 03           |
| 540           | 316                  | 04           |
| 600           | 308                  | 04           |
| 660           | 301                  | 05           |
| 720           | 300                  | 05           |
| 780           | 299                  | 04           |
| 840           | 298                  | 04           |
| 900           | 296                  | 04           |
| 960           | 295                  | 04           |
| 1020          | 295                  | 04           |
| 1080          | 294                  | 04           |
| 1140          | 294                  | 04           |
| 1200          | 294                  | 03           |
| 1260          | 289                  | 03           |
| 1320          | 281                  | 03           |
| 1380          | 271                  | 03           |
| 1440          | 260                  | 03           |
| 1500          | 249                  | 03           |
| 1560          | 234                  | 03           |
| 1620          | 219                  | 03           |
| 1680          | 206                  | 03           |
| 1740          | 196                  | 04           |
| 1800          | 189                  | 04           |

[illegible][illegible]

## PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM LC-39

DATE 19 FEB 1981

TIME 1100 MST

COORDINATES (WSTM)

$$\bar{X} = 530,938.82$$
$$Y = 186,564.96$$

11 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL x OR FEET AGL       .

| HEIGHT<br>AGL | DIRECTION<br>DEGREES | SPEED<br>KTS |
|---------------|----------------------|--------------|
| sfc           | CALM                 |              |
| 60            | 013                  | 01           |
| 120           | 013                  | 01           |
| 180           | 013                  | 02           |
| 240           | 013                  | 02           |
| 300           | 013                  | 03           |
| 360           | 009                  | 03           |
| 420           | 355                  | 03           |
| 480           | 342                  | 04           |
| 540           | 333                  | 04           |
| 600           | 325                  | 05           |
| 660           | 320                  | 06           |
| 720           | 316                  | 06           |
| 780           | 314                  | 07           |
| 840           | 311                  | 08           |
| 900           | 310                  | 08           |
| 960           | 308                  | 09           |
| 1020          | 307                  | 08           |
| 1080          | 306                  | 07           |
| 1140          | 305                  | 06           |
| 1200          | 303                  | 05           |
| 1260          | 300                  | 04           |
| 1320          | 293                  | 03           |
| 1380          | 278                  | 02           |
| 1440          | 247                  | 02           |
| 1500          | 205                  | 02           |
| 1560          | 180                  | 03           |
| 1620          | 180                  | 03           |
| 1680          | 182                  | 03           |
| 1740          | 184                  | 03           |
| 1800          | 186                  | 04           |

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GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA

0500020113  
WHITE SANDS

TABLE 4

STATION ALTITUDE 3989.00 FEET MSL  
19 FEB. 81 1050 HRS MST  
ASCENSION NO. 113

| PRESSURE GEOMET. IC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|---|----------------|------------------------|----------------------|
|   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 687.3   | 15.8           | -3.1                   | 27.0                 |
| 881.8   | 15.1           | -0.6                   | 34.0                 |
| 861.2   | 13.3           | -2.6                   | 33.0                 |
| 850.0   | 14.9           | -0.8                   | 34.0                 |
| 840.4   | 15.1           | -1.0                   | 33.0                 |
| 769.4   | 10.1           | -5.4                   | 33.0                 |
| 700.0   | 7.4            | -9.9                   | 28.0                 |
| 654.6   | 3.6            | -12.7                  | 29.0                 |
| 627.2   | 2.2            | -14.4                  | 28.0                 |
| 600.6   | -0.2           | -16.5                  | 28.0                 |
| 500.0   | -14.0          | -28.1                  | 29.0                 |
| 482.2   | -16.3          | -30.1                  | 29.0                 |
| 450.8   | -20.0          | -33.0                  | 30.0                 |
| 413.0   | -26.2          | -38.2                  | 31.0                 |
| 400.0   | -28.1          | -39.9                  | 31.0                 |
| 327.4   | -39.5          | -50.1                  | 31.0                 |
| 300.0   | -44.7          |                        |                      |
| 277.2   | -48.8          |                        |                      |
| 261.3   | -51.6          |                        |                      |
| 257.4   | -51.5          |                        |                      |
| 250.0   | -53.0          |                        |                      |
| 231.6   | -56.4          |                        |                      |
| 215.8   | -58.4          |                        |                      |
| 205.6   | -56.7          |                        |                      |
| 200.0   | -57.0          |                        |                      |
| 191.2   | -61.4          |                        |                      |
| 172.8   | -62.8          |                        |                      |
| 163.8   | -61.6          |                        |                      |
| 159.8   | -62.7          |                        |                      |
| 150.0   | -63.3          |                        |                      |
| 144.6   | -61.9          |                        |                      |
| 141.0   | -63.3          |                        |                      |
| 135.4   | -61.3          |                        |                      |
| 130.0   | -65.4          |                        |                      |
| 113.6   | -64.6          |                        |                      |
| 108.6   | -61.6          |                        |                      |
| 105.5   | -62.0          |                        |                      |
| 100.0   | -71.7          |                        |                      |
| 82.6  | -72.0          |                        |                      |
| 77.0  |                |                        |                      |

STATION ALTITUDE 3989.00 FEET MSL  
 19 FEB. 81 1050 HRS MST  
 ASCENSION. NO. 113

SIGNIFICANT LEVEL DATA

0500020113  
 WHITE SANDS

TABLE 4 cont'

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

| PRESSURE GEOMET. IC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|---|----------------|------------------------|----------------------|
|   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 70.0 61082.9  | -65.8          |                        |                      |
| 64.2 62820.9  | -65.0          |                        |                      |
| 54.4 66141.1  | -66.9          |                        |                      |
| 50.0 67847.7  | -61.2          |                        |                      |
| 30.0 78493.9  | -54.6          |                        |                      |
| 20.0 87142.7  | -51.5          |                        |                      |
| 18.8 88463.4  | -52.5          |                        |                      |
| 12.8 96788.7  | -47.6          |                        |                      |
| 11.0 100143.8   | -42.5          |                        |                      |

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

UPPER AIR DATA  
0500020113  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
10 FEB. 81 1050 HRS MST  
ASCENSION NO. 113

TABLE 5

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GRAMS/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES (IN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|---------------------------------|----------------------------|--|----------------|---------------------------|
|                                   |                       |   |                      |                                 |                            |  |                |                           |
| 3989.0                            | 887.3                 | 15.8  | 27.0                 | 1067.5                          | 662.9                      | 360.0                                  | 4.1            | 1.000260                  |
| 4000.0                            | 880.9                 | 15.8  | 27.4                 | 1067.3                          | 662.9                      | 359.9                                  | 4.1            | 1.000260                  |
| 4500.0                            | 871.1                 | 14.2  | 33.5                 | 1053.7                          | 661.1                      | 354.0                                  | 4.7            | 1.000260                  |
| 5000.0                            | 855.5                 | 14.1  | 33.5                 | 1035.0                          | 661.1                      | 349.6                                  | 5.4            | 1.000255                  |
| 5500.0                            | 840.3                 | 15.1  | 33.0                 | 1012.9                          | 662.3                      | 346.1                                  | 6.1            | 1.000252                  |
| 6000.0                            | 825.1                 | 14.1  | 33.0                 | 998.4                           | 661.0                      | 338.1                                  | 6.3            | 1.000247                  |
| 6500.0                            | 810.3                 | 13.0  | 33.0                 | 984.1                           | 659.8                      | 320.1                                  | 5.9            | 1.000242                  |
| 7000.0                            | 795.7                 | 12.0  | 33.0                 | 970.0                           | 658.6                      | 317.9                                  | 5.8            | 1.000238                  |
| 7500.0                            | 781.4                 | 11.0  | 32.9                 | 956.1                           | 657.4                      | 325.8                                  | 5.8            | 1.000233                  |
| 8000.0                            | 767.3                 | 10.0  | 32.9                 | 942.1                           | 656.2                      | 341.5                                  | 4.7            | 1.000229                  |
| 8500.0                            | 753.4                 | 9.5   | 31.9                 | 926.8                           | 655.6                      | 6.7                                    | 3.6            | 1.000224                  |
| 9000.0                            | 739.6                 | 9.0   | 30.9                 | 911.6                           | 654.9                      | 81.0                                   | 1.9            | 1.000220                  |
| 9500.0                            | 725.1                 | 8.4   | 29.9                 | 896.8                           | 654.3                      | 126.5                                  | 3.6            | 1.000216                  |
| 10000.0                           | 712.9                 | 7.9   | 29.0                 | 882.1                           | 653.7                      | 137.6                                  | 5.1            | 1.000211                  |
| 10500.0                           | 699.9                 | 7.4   | 28.0                 | 867.8                           | 653.0                      | 137.5                                  | 5.3            | 1.000207                  |
| 11000.0                           | 687.0                 | 6.3   | 28.3                 | 855.0                           | 651.8                      | 133.0                                  | 5.0            | 1.000204                  |
| 11500.0                           | 674.3                 | 5.3   | 28.6                 | 842.5                           | 650.5                      | 108.1                                  | 4.1            | 1.000200                  |
| 12000.0                           | 661.9                 | 4.2   | 28.8                 | 830.1                           | 649.3                      | 83.2                                   | 4.0            | 1.000197                  |
| 12500.0                           | 649.6                 | 3.4   | 28.8                 | 817.4                           | 648.2                      | 64.1                                   | 4.3            | 1.000193                  |
| 13000.0                           | 637.5                 | 2.7   | 28.4                 | 804.0                           | 647.5                      | 64.3                                   | 5.0            | 1.000190                  |
| 13500.0                           | 625.7                 | 2.1   | 28.0                 | 791.0                           | 646.7                      | 68.2                                   | 5.7            | 1.000186                  |
| 14000.0                           | 613.9                 | 1.0   | 28.0                 | 779.2                           | 645.4                      | 69.9                                   | 5.8            | 1.000183                  |
| 14500.0                           | 602.4                 | -0.0  | 28.0                 | 767.6                           | 644.2                      | 76.0                                   | 5.8            | 1.000180                  |
| 15000.0                           | 590.8                 | -1.4  | 28.1                 | 756.8                           | 642.5                      | 94.1                                   | 5.7            | 1.000177                  |
| 15500.0                           | 579.4                 | -2.9  | 28.2                 | 746.2                           | 640.7                      | 108.8                                  | 7.1            | 1.000173                  |
| 16000.0                           | 568.2                 | -4.4  | 28.3                 | 735.9                           | 639.0                      | 116.7                                  | 9.4            | 1.000170                  |
| 16500.0                           | 557.3                 | -5.8  | 28.4                 | 725.7                           | 637.2                      | 123.1                                  | 11.4           | 1.000168                  |
| 17000.0                           | 546.5                 | -7.3  | 28.5                 | 715.7                           | 635.4                      | 127.7                                  | 13.4           | 1.000165                  |
| 17500.0                           | 536.0                 | -8.8  | 28.6                 | 705.8                           | 633.6                      | 126.4                                  | 13.6           | 1.000162                  |
| 18000.0                           | 525.6                 | -10.2                                       | 28.7                 | 696.0                           | 631.9                      | 124.1                                  | 13.3           | 1.000159                  |
| 18500.0                           | 515.5                 | -11.7                                       | 28.8                 | 686.5                           | 630.1                      | 118.1                                  | 11.7           | 1.000157                  |
| 19000.0                           | 505.5                 | -13.2                                       | 28.9                 | 677.1                           | 628.3                      | 103.4                                  | 10.2           | 1.000154                  |
| 19500.0                           | 495.6                 | -14.6                                       | 29.0                 | 667.4                           | 626.6                      | 80.3                                   | 9.7            | 1.000152                  |
| 20000.0                           | 485.7                 | -15.8                                       | 29.0                 | 657.4                           | 625.0                      | 68.8                                   | 10.9           | 1.000149                  |
| 20500.0                           | 476.0                 | -17.0                                       | 29.2                 | 647.1                           | 623.6                      | 61.7                                   | 12.2           | 1.000147                  |
| 21000.0                           | 466.4                 | -18.1                                       | 29.5                 | 636.9                           | 622.2                      | 58.0                                   | 12.9           | 1.000144                  |
| 21500.0                           | 457.0                 | -19.2                                       | 29.8                 | 626.8                           | 620.9                      | 52.1                                   | 14.2           | 1.000142                  |
| 22000.0                           | 447.8                 | -20.5                                       | 30.1                 | 617.1                           | 619.4                      | 44.8                                   | 16.2           | 1.000140                  |
| 22500.0                           | 438.6                 | -21.9                                       | 30.3                 | 608.0                           | 617.5                      | 42.7                                   | 16.2           | 1.000137                  |
| 23000.0                           | 429.6                 | -23.4                                       | 30.6                 | 599.1                           | 615.7                      | 43.8                                   | 16.0           | 1.000135                  |

STATION ALTITUDE 3989.00 FEET MSL  
19 FEB. 81 1050 HRS MST  
ASCENSION NO. 113

UPPER AIR DATA  
0500020113  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT UEG  
106.37033 LON DEG

TABLE 5 cont'

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CENTIGRADE | REL HUMIDITY<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED OF SOUND<br>KNOTS | WIND DATA<br>DIRECTION DEGREES(TN)<br>SPEED KNOTS | INDEX<br>OF REFRACTION |
|--------------------------------|-----------------------|--|-------------------------|--|-------------------------|---|------------------------|
| 23500.0                        | 420.7                 | -24.9                                    | 30.8                    | 590.2                                  | 613.9                   | 52.5  | 1.000133               |
| 24000.0                        | 412.1                 | -26.3                                    | 31.0                    | 581.5                                  | 612.1                   | 61.4  | 1.000131               |
| 24500.0                        | 403.5                 | -27.6                                    | 31.0                    | 572.3                                  | 610.5                   | 70.4  | 1.000129               |
| 25000.0                        | 394.9                 | -28.8                                    | 31.0                    | 563.0                                  | 609.0                   | 74.0  | 1.000127               |
| 25500.0                        | 386.5                 | -30.1                                    | 31.0                    | 553.7                                  | 607.5                   | 75.2  | 1.000124               |
| 26000.0                        | 378.2                 | -31.3                                    | 31.0                    | 544.6                                  | 605.9                   | 68.7  | 1.000122               |
| 26500.0                        | 370.1                 | -32.5                                    | 31.0                    | 535.7                                  | 604.4                   | 62.6  | 1.000120               |
| 27000.0                        | 362.1                 | -33.8                                    | 31.0                    | 526.9                                  | 602.8                   | 54.0  | 1.000118               |
| 27500.0                        | 354.4                 | -35.0                                    | 31.0                    | 518.3                                  | 601.2                   | 45.4  | 1.000116               |
| 28000.0                        | 346.8                 | -36.2                                    | 31.0                    | 509.9                                  | 599.7                   | 35.3  | 1.000114               |
| 28500.0                        | 339.3                 | -37.5                                    | 31.0                    | 501.5                                  | 598.1                   | 31.1  | 1.000112               |
| 29000.0                        | 332.1                 | -38.7                                    | 31.0                    | 493.4                                  | 596.5                   | 29.3  | 1.000110               |
| 29500.0                        | 324.9                 | -40.0                                    | 28.2**                  | 485.3                                  | 594.9                   | 27.6  | 1.000108               |
| 30000.0                        | 317.7                 | -41.3                                    | 20.3**                  | 477.3                                  | 593.2                   | 25.9  | 1.000107               |
| 30500.0                        | 310.6                 | -42.6                                    | 12.3**                  | 469.4                                  | 591.5                   | 24.0  | 1.000105               |
| 31000.0                        | 303.7                 | -44.0                                    | 4.4**                   | 461.7                                  | 589.8                   | 20.5  | 1.000103               |
| 31500.0                        | 296.9                 | -45.2                                    |                         | 453.8                                  | 588.1                   | 15.1  | 1.000101               |
| 32000.0                        | 290.2                 | -46.4                                    |                         | 445.9                                  | 586.6                   | 10.9  | 1.000099               |
| 32500.0                        | 283.6                 | -47.6                                    |                         | 438.1                                  | 585.1                   | 7.5   | 1.000098               |
| 33000.0                        | 277.2                 | -48.8                                    |                         | 430.4                                  | 583.5                   | 4.2   | 1.000096               |
| 33500.0                        | 270.8                 | -49.9                                    |                         | 422.6                                  | 582.1                   | .1  | 1.000094               |
| 34000.0                        | 264.6                 | -51.0                                    |                         | 415.0                                  | 580.7                   | 352.2   | 1.000092               |
| 34500.0                        | 258.5                 | -51.5                                    |                         | 406.4                                  | 580.0                   | 344.0   | 1.000091               |
| 35000.0                        | 252.5                 | -52.5                                    |                         | 398.7                                  | 578.7                   | 338.2   | 1.000089               |
| 35500.0                        | 246.6                 | -53.6                                    |                         | 391.3                                  | 577.2                   | 333.3   | 1.000087               |
| 36000.0                        | 240.8                 | -54.7                                    |                         | 384.0                                  | 575.9                   | 330.4   | 1.000086               |
| 36500.0                        | 235.2                 | -55.7                                    |                         | 376.8                                  | 574.5                   | 328.6   | 1.000084               |
| 37000.0                        | 229.7                 | -56.4                                    |                         | 369.1                                  | 573.6                   | 327.9   | 1.000082               |
| 37500.0                        | 224.2                 | -56.4                                    |                         | 360.4                                  | 573.6                   | 329.3   | 1.000080               |
| 38000.0                        | 218.9                 | -56.4                                    |                         | 351.9                                  | 573.6                   | 332.2   | 1.000078               |
| 38500.0                        | 213.8                 | -56.8                                    |                         | 344.2                                  | 573.0                   | 333.0   | 1.000077               |
| 39000.0                        | 208.7                 | -57.8                                    |                         | 337.6                                  | 571.7                   | 332.6   | 1.000075               |
| 39500.0                        | 203.7                 | -57.8                                    |                         | 329.6                                  | 571.6                   | 319.2   | 1.000073               |
| 40000.0                        | 198.9                 | -56.8                                    |                         | 320.3                                  | 573.0                   | 294.2   | 1.000071               |
| 40500.0                        | 194.2                 | -57.4                                    |                         | 313.6                                  | 572.2                   | 260.8   | 1.000070               |
| 41000.0                        | 189.6                 | -58.1                                    |                         | 307.1                                  | 571.3                   | 242.8   | 1.000068               |
| 41500.0                        | 185.0                 | -59.0                                    |                         | 300.9                                  | 570.1                   | 239.3   | 1.000067               |
| 42000.0                        | 180.6                 | -59.8                                    |                         | 294.9                                  | 569.0                   | 230.6   | 1.000066               |
| 42500.0                        | 176.3                 | -60.7                                    |                         | 289.0                                  | 567.8                   | 245.3   | 1.000064               |
| 43000.0                        | 172.0                 | -61.5                                    |                         | 283.2                                  | 566.7                   | 255.0   | 1.000063               |

\*\* AT LEAST ONE ASSUMED REL FIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL  
19 FEB. 81 1050 HRS MST  
ASCLNSION NO. 113

UPPER AIR DATA  
0500020113  
WHITE SANDS  
TABLE 5 cont'

GEODETTIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 43500.0                           | 167.9                 | -62.2          |                        |                      | 277.2                        | 565.9                      | 265.6                    | 27.4           | 1.000062                  |
| 44000.0                           | 163.8                 | -62.8          |                        |                      | 271.3                        | 565.0                      | 277.2                    | 26.6           | 1.000060                  |
| 44500.0                           | 159.8                 | -61.6          |                        |                      | 263.2                        | 566.6                      | 284.7                    | 27.0           | 1.000059                  |
| 45000.0                           | 155.9                 | -62.0          |                        |                      | 257.3                        | 566.1                      | 288.5                    | 27.8           | 1.000057                  |
| 45500.0                           | 152.2                 | -62.5          |                        |                      | 251.6                        | 565.5                      | 292.5                    | 28.6           | 1.000056                  |
| 46000.0                           | 148.5                 | -62.9          |                        |                      | 246.0                        | 564.9                      | 297.0                    | 29.1           | 1.000055                  |
| 46500.0                           | 144.9                 | -63.3          |                        |                      | 240.4                        | 564.4                      | 300.9                    | 30.5           | 1.000054                  |
| 47000.0                           | 141.3                 | -62.0          |                        |                      | 233.2                        | 566.1                      | 303.0                    | 33.9           | 1.000052                  |
| 47500.0                           | 137.9                 | -62.7          |                        |                      | 228.2                        | 565.2                      | 304.6                    | 37.5           | 1.000051                  |
| 48000.0                           | 134.6                 | -63.0          |                        |                      | 223.0                        | 564.8                      | 305.1                    | 42.1           | 1.000050                  |
| 48500.0                           | 131.3                 | -61.8          |                        |                      | 216.4                        | 566.4                      | 305.9                    | 46.4           | 1.000048                  |
| 49000.0                           | 128.1                 | -61.7          |                        |                      | 211.1                        | 566.4                      | 309.3                    | 47.7           | 1.000047                  |
| 49500.0                           | 125.0                 | -62.5          |                        |                      | 206.7                        | 565.4                      | 312.5                    | 49.1           | 1.000046                  |
| 50000.0                           | 121.9                 | -63.2          |                        |                      | 202.4                        | 564.4                      | 315.6                    | 48.7           | 1.000045                  |
| 50500.0                           | 119.0                 | -64.0          |                        |                      | 198.1                        | 563.4                      | 318.8                    | 47.8           | 1.000044                  |
| 51000.0                           | 116.1                 | -64.7          |                        |                      | 194.0                        | 562.4                      | 321.2                    | 45.9           | 1.000043                  |
| 51500.0                           | 113.2                 | -65.3          |                        |                      | 189.8                        | 561.6                      | 322.9                    | 42.8           | 1.000042                  |
| 52000.0                           | 110.5                 | -64.9          |                        |                      | 184.8                        | 562.2                      | 324.7                    | 39.4           | 1.000041                  |
| 52500.0                           | 107.8                 | -63.8          |                        |                      | 179.3                        | 563.7                      | 326.1                    | 34.7           | 1.000040                  |
| 53000.0                           | 105.1                 | -61.6          |                        |                      | 173.1                        | 566.6                      | 328.0                    | 30.1           | 1.000039                  |
| 53500.0                           | 102.6                 | -61.8          |                        |                      | 169.1                        | 566.4                      | 324.0                    | 24.0           | 1.000038                  |
| 54000.0                           | 100.1                 | -62.0          |                        |                      | 165.2                        | 566.1                      | 315.0                    | 17.9           | 1.000037                  |
| 54500.0                           | 97.6                  | -63.2          |                        |                      | 162.0                        | 564.5                      | 295.6                    | 13.6           | 1.000036                  |
| 55000.0                           | 95.2                  | -64.5          |                        |                      | 159.0                        | 562.8                      | 265.6                    | 13.2           | 1.000035                  |
| 55500.0                           | 92.9                  | -65.8          |                        |                      | 156.0                        | 561.0                      | 242.2                    | 16.2           | 1.000035                  |
| 56000.0                           | 90.6                  | -67.0          |                        |                      | 153.1                        | 559.3                      | 242.4                    | 21.4           | 1.000034                  |
| 56500.0                           | 88.3                  | -68.3          |                        |                      | 150.2                        | 557.6                      | 242.6                    | 26.6           | 1.000033                  |
| 57000.0                           | 86.1                  | -69.6          |                        |                      | 147.4                        | 555.8                      | 248.8                    | 26.6           | 1.000033                  |
| 57500.0                           | 84.0                  | -70.9          |                        |                      | 144.6                        | 554.1                      | 258.8                    | 25.0           | 1.000032                  |
| 58000.0                           | 81.9                  | -71.7          |                        |                      | 141.7                        | 552.9                      | 269.4                    | 22.8           | 1.000032                  |
| 58500.0                           | 79.8                  | -71.8          |                        |                      | 138.1                        | 552.7                      | 282.8                    | 18.7           | 1.000031                  |
| 59000.0                           | 77.8                  | -72.0          |                        |                      | 134.7                        | 552.6                      | 302.0                    | 16.1           | 1.000030                  |
| 59500.0                           | 75.8                  | -71.0          |                        |                      | 130.7                        | 553.9                      | 301.3                    | 14.9           | 1.000029                  |
| 60000.0                           | 73.9                  | -69.4          |                        |                      | 126.4                        | 556.1                      | 299.2                    | 13.7           | 1.000028                  |
| 60500.0                           | 72.1                  | -67.7          |                        |                      | 122.3                        | 558.4                      | 299.0                    | 12.9           | 1.000027                  |
| 61000.0                           | 70.3                  | -66.1          |                        |                      | 118.3                        | 560.6                      | 300.9                    | 12.4           | 1.000026                  |
| 61500.0                           | 68.6                  | -65.6          |                        |                      | 115.1                        | 561.2                      | 302.9                    | 11.8           | 1.000026                  |
| 62000.0                           | 66.9                  | -65.4          |                        |                      | 112.1                        | 561.6                      | 306.0                    | 10.9           | 1.000025                  |
| 62500.0                           | 65.2                  | -65.1          |                        |                      | 109.3                        | 561.9                      | 309.6                    | 10.0           | 1.000024                  |
| 63000.0                           | 63.6                  | -65.1          |                        |                      | 106.5                        | 561.9                      | 309.5                    | 8.8            | 1.000024                  |

STATION ALTITUDE 3989.00 FEET MSL  
19 FEB. 81  
ASCENSION NO. 113

UPPER AIR DATA  
0500020113  
WHITE SANDS  
TABLE 5 cont'

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 63500.0                        | 62.1                  | -65.4                      |                      | 104.1                        | 561.5                      | 304.9                                  | 7.3            | 1.000023                  |
| 64000.0                        | 60.5                  | -65.7                      |                      | 101.6                        | 561.2                      | 298.1                                  | 6.0            | 1.000023                  |
| 64500.0                        | 59.0                  | -66.0                      |                      | 99.3                         | 560.8                      | 309.5                                  | 7.0            | 1.000022                  |
| 65000.0                        | 57.6                  | -66.2                      |                      | 97.0                         | 560.4                      | 317.0                                  | 8.3            | 1.000022                  |
| 65500.0                        | 56.2                  | -66.5                      |                      | 94.7                         | 560.0                      | 323.4                                  | 10.4           | 1.000021                  |
| 66000.0                        | 54.8                  | -66.8                      |                      | 92.5                         | 559.6                      | 326.5                                  | 13.6           | 1.000021                  |
| 66500.0                        | 53.4                  | -65.7                      |                      | 89.7                         | 561.1                      | 328.4                                  | 16.8           | 1.000020                  |
| 67000.0                        | 52.1                  | -64.0                      |                      | 86.9                         | 563.4                      | 331.2                                  | 16.4           | 1.000019                  |
| 67500.0                        | 50.9                  | -62.4                      |                      | 84.1                         | 565.6                      | 334.1                                  | 16.0           | 1.000019                  |
| 68000.0                        | 49.6                  | -61.1                      |                      | 81.5                         | 567.3                      | 338.9                                  | 15.5           | 1.000018                  |
| 68500.0                        | 48.5                  | -60.8                      |                      | 79.5                         | 567.7                      | 345.3                                  | 15.2           | 1.000018                  |
| 69000.0                        | 47.3                  | -60.5                      |                      | 77.5                         | 568.1                      | 352.0                                  | 15.1           | 1.000017                  |
| 69500.0                        | 46.2                  | -60.2                      |                      | 75.6                         | 568.5                      | 350.5                                  | 13.5           | 1.000017                  |
| 70000.0                        | 45.1                  | -59.9                      |                      | 73.7                         | 569.0                      | 348.5                                  | 12.0           | 1.000016                  |
| 70500.0                        | 44.0                  | -59.6                      |                      | 71.8                         | 569.4                      | 344.2                                  | 9.6            | 1.000016                  |
| 71000.0                        | 43.0                  | -59.2                      |                      | 70.0                         | 569.8                      | 329.3                                  | 6.0            | 1.000016                  |
| 71500.0                        | 42.0                  | -58.9                      |                      | 68.2                         | 570.2                      | 286.3                                  | 3.6            | 1.000015                  |
| 72000.0                        | 41.0                  | -58.6                      |                      | 66.5                         | 570.6                      | 249.7                                  | 4.8            | 1.000015                  |
| 72500.0                        | 40.0                  | -58.3                      |                      | 64.9                         | 571.0                      | 242.2                                  | 6.8            | 1.000014                  |
| 73000.0                        | 39.0                  | -58.0                      |                      | 63.2                         | 571.4                      | 238.1                                  | 8.8            | 1.000014                  |
| 73500.0                        | 38.1                  | -57.7                      |                      | 61.6                         | 571.8                      | 239.2                                  | 10.2           | 1.000014                  |
| 74000.0                        | 37.2                  | -57.4                      |                      | 60.1                         | 572.2                      | 241.4                                  | 11.3           | 1.000013                  |
| 74500.0                        | 36.3                  | -57.1                      |                      | 58.6                         | 572.7                      | 243.1                                  | 12.4           | 1.000013                  |
| 75000.0                        | 35.5                  | -56.8                      |                      | 57.1                         | 573.1                      | 250.0                                  | 10.9           | 1.000013                  |
| 75500.0                        | 34.6                  | -56.5                      |                      | 55.7                         | 573.5                      | 259.4                                  | 9.5            | 1.000012                  |
| 76000.0                        | 33.8                  | -56.1                      |                      | 54.3                         | 573.9                      | 271.7                                  | 8.5            | 1.000012                  |
| 76500.0                        | 33.0                  | -55.8                      |                      | 52.9                         | 574.3                      | 286.7                                  | 8.2            | 1.000012                  |
| 77000.0                        | 32.2                  | -55.5                      |                      | 51.6                         | 574.7                      | 301.6                                  | 8.5            | 1.000011                  |
| 77500.0                        | 31.5                  | -55.2                      |                      | 50.3                         | 575.1                      | 311.1                                  | 9.2            | 1.000011                  |
| 78000.0                        | 30.7                  | -54.9                      |                      | 49.0                         | 575.5                      | 311.7                                  | 9.7            | 1.000011                  |
| 78500.0                        | 30.0                  | -54.6                      |                      | 47.8                         | 575.9                      | 312.3                                  | 10.2           | 1.000011                  |
| 79000.0                        | 29.3                  | -54.4                      |                      | 46.7                         | 576.2                      | 312.7                                  | 10.5           | 1.000010                  |
| 79500.0                        | 28.6                  | -54.2                      |                      | 45.5                         | 576.4                      | 312.7                                  | 10.6           | 1.000010                  |
| 80000.0                        | 28.0                  | -54.1                      |                      | 44.4                         | 576.6                      | 312.7                                  | 10.8           | 1.000010                  |
| 80500.0                        | 27.3                  | -53.9                      |                      | 43.4                         | 576.9                      | 311.2                                  | 11.0           | 1.000010                  |
| 81000.0                        | 26.7                  | -53.7                      |                      | 42.3                         | 577.1                      | 308.3                                  | 11.3           | 1.000009                  |
| 81500.0                        | 26.1                  | -53.5                      |                      | 41.3                         | 577.3                      | 305.6                                  | 11.6           | 1.000009                  |
| 82000.0                        | 25.5                  | -53.3                      |                      | 40.3                         | 577.6                      | 301.7                                  | 11.6           | 1.000009                  |
| 82500.0                        | 24.9                  | -53.2                      |                      | 39.4                         | 577.8                      | 297.0                                  | 11.5           | 1.000009                  |
| 83000.0                        | 24.3                  | -53.0                      |                      | 38.4                         | 578.1                      | 292.3                                  | 11.6           | 1.000009                  |

STATION ALTITUDE 3989.00 FEET MSL  
10 FEB. 81  
ASCENSION NO. 113

UPPER AIR DATA  
0500020113  
WHITE SANDS  
TABLE 5 CONT'

GEODETIC COORDINATES  
32.40043 LAT UEG  
106.37033 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 83500.0                           | 23.7                  | -52.8                                       |                      | 37.5                         | 578.3                      | 285.3                                  | 12.2           | 1.000008                  |
| 84000.0                           | 23.2                  | -52.6                                       |                      | 36.6                         | 578.5                      | 278.4                                  | 13.2           | 1.000008                  |
| 84500.0                           | 22.6                  | -52.4                                       |                      | 35.7                         | 578.8                      | 272.5                                  | 14.4           | 1.000008                  |
| 85000.0                           | 22.1                  | -52.3                                       |                      | 34.9                         | 579.0                      | 277.1                                  | 15.7           | 1.000008                  |
| 85500.0                           | 21.6                  | -52.1                                       |                      | 34.0                         | 579.2                      | 284.6                                  | 17.3           | 1.000008                  |
| 86000.0                           | 21.1                  | -51.9                                       |                      | 33.2                         | 579.5                      | 290.8                                  | 19.1           | 1.000007                  |
| 86500.0                           | 20.6                  | -51.7                                       |                      | 32.4                         | 579.7                      | 296.1                                  | 20.4           | 1.000007                  |
| 87000.0                           | 20.1                  | -51.6                                       |                      | 31.7                         | 579.9                      | 301.4                                  | 21.0           | 1.000007                  |
| 87500.0                           | 19.7                  | -51.8                                       |                      | 31.0                         | 579.6                      | 306.4                                  | 21.8           | 1.000007                  |
| 88000.0                           | 19.2                  | -52.1                                       |                      | 30.3                         | 579.2                      | 309.9                                  | 22.3           | 1.000007                  |
| 88500.0                           | 18.8                  | -52.5                                       |                      | 29.6                         | 578.7                      | 308.5                                  | 21.4           | 1.000007                  |
| 89000.0                           | 18.3                  | -52.2                                       |                      | 28.9                         | 579.1                      | 307.0                                  | 20.6           | 1.000006                  |
| 89500.0                           | 17.9                  | -51.9                                       |                      | 28.2                         | 579.5                      | 305.4                                  | 19.7           | 1.000006                  |
| 90000.0                           | 17.5                  | -51.6                                       |                      | 27.5                         | 579.9                      | 304.0                                  | 19.2           | 1.000006                  |
| 90500.0                           | 17.1                  | -51.3                                       |                      | 26.9                         | 580.3                      | 302.5                                  | 18.7           | 1.000006                  |
| 91000.0                           | 16.7                  | -51.0                                       |                      | 26.2                         | 580.6                      | 300.9                                  | 18.2           | 1.000006                  |
| 91500.0                           | 16.3                  | -50.7                                       |                      | 25.6                         | 581.0                      | 297.4                                  | 18.0           | 1.000006                  |
| 92000.0                           | 16.0                  | -50.4                                       |                      | 25.0                         | 581.4                      | 292.7                                  | 17.9           | 1.000006                  |
| 92500.0                           | 15.6                  | -50.1                                       |                      | 24.4                         | 581.8                      | 289.1                                  | 18.0           | 1.000005                  |
| 93000.0                           | 15.2                  | -49.8                                       |                      | 23.8                         | 582.2                      | 283.7                                  | 18.6           | 1.000005                  |
| 93500.0                           | 14.9                  | -49.5                                       |                      | 23.2                         | 582.6                      | 279.9                                  | 19.8           | 1.000005                  |
| 94000.0                           | 14.6                  | -49.2                                       |                      | 22.7                         | 582.9                      | 276.5                                  | 21.1           | 1.000005                  |
| 94500.0                           | 14.2                  | -48.9                                       |                      | 22.1                         | 583.3                      | 273.9                                  | 22.4           | 1.000005                  |
| 95000.0                           | 13.9                  | -48.7                                       |                      | 21.6                         | 583.7                      | 277.3                                  | 23.8           | 1.000005                  |
| 95500.0                           | 13.6                  | -48.4                                       |                      | 21.1                         | 584.1                      | 280.3                                  | 25.3           | 1.000005                  |
| 96000.0                           | 13.3                  | -48.1                                       |                      | 20.5                         | 584.5                      | 283.0                                  | 26.9           | 1.000005                  |
| 96500.0                           | 13.0                  | -47.8                                       |                      | 20.1                         | 584.9                      | 284.4                                  | 27.3           | 1.000004                  |
| 97000.0                           | 12.7                  | -47.3                                       |                      | 19.6                         | 585.5                      | 285.5                                  | 27.5           | 1.000004                  |
| 97500.0                           | 12.4                  | -46.5                                       |                      | 19.1                         | 586.5                      | 286.6                                  | 27.6           | 1.000004                  |
| 98000.0                           | 12.1                  | -45.8                                       |                      | 18.6                         | 587.5                      |  |                | 1.000004                  |
| 98500.0                           | 11.8                  | -45.0                                       |                      | 18.1                         | 588.4                      |  |                | 1.000004                  |
| 99000.0                           | 11.6                  | -44.2                                       |                      | 17.6                         | 589.4                      |  |                | 1.000004                  |
| 99500.0                           | 11.3                  | -43.5                                       |                      | 17.2                         | 590.4                      |  |                | 1.000004                  |
| 100000.0                          | 11.1                  | -42.7                                       |                      | 16.7                         | 591.4                      |  |                | 1.000004                  |

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

MANDATORY LEVELLS  
0500020113  
WHITE SANDS  
TABLE 6

STATION ALTITUDE 3989.00 FEET MSL  
19 FEB. 81 1050 HRS MST  
ASCENSION NO. 113

| PRESSURE GEOPOTENTIAL, |        | TEMPERATURE                  |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|------------------------|--------|------------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS              | FLEET  | AIR<br>DEGREES<br>CENTIGRADE | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                  | 5176.  | 14.9                         | -8                     | 34.                  | 348.2                    | 5.7            |
| 800.0                  | 6852.  | 12.3                         | -3.5                   | 33.                  | 315.6                    | 5.9            |
| 750.0                  | 8616.  | 9.4                          | -6.6                   | 32.                  | 15.4                     | 2.9            |
| 700.0                  | 10486. | 7.4                          | -9.9                   | 28.                  | 137.5                    | 5.3            |
| 650.0                  | 12472. | 3.4                          | -13.0                  | 29.                  | 64.8                     | 4.3            |
| 600.0                  | 14589. | -3                           | -16.5                  | 28.                  | 79.0                     | 5.7            |
| 550.0                  | 16845. | -6.8                         | -22.0                  | 28.                  | 126.6                    | 12.9           |
| 500.0                  | 19253. | -14.0                        | -28.1                  | 29.                  | 91.1                     | 9.7            |
| 450.0                  | 21846. | -20.1                        | -33.1                  | 30.                  | 46.5                     | 15.7           |
| 400.0                  | 24664. | -28.1                        | -39.9                  | 31.                  | 72.3                     | 14.2           |
| 350.0                  | 27760. | -35.7                        | -46.7                  | 31.                  | 39.7                     | 15.6           |
| 300.0                  | 31212. | -44.7                        |                        |                      | 17.6                     | 18.8           |
| 250.0                  | 35137. | -53.0                        |                        |                      | 335.5                    | 13.7           |
| 200.0                  | 39790. | -56.7                        |                        |                      | 301.2                    | 9.7            |
| 175.0                  | 42542. | -60.9                        |                        |                      | 247.7                    | 29.9           |
| 150.0                  | 45669. | -62.7                        |                        |                      | 295.0                    | 28.8           |
| 125.0                  | 49361. | -62.5                        |                        |                      | 312.4                    | 49.1           |
| 100.0                  | 53856. | -62.0                        |                        |                      | 315.2                    | 18.0           |
| 80.0                   | 58264. | -71.8                        |                        |                      | 280.5                    | 19.2           |
| 70.0                   | 60874. | -65.8                        |                        |                      | 301.1                    | 12.4           |
| 60.0                   | 63952. | -65.8                        |                        |                      | 301.9                    | 6.3            |
| 50.0                   | 67594. | -61.2                        |                        |                      | 336.5                    | 15.7           |
| 40.0                   | 72170. | -58.3                        |                        |                      | 243.1                    | 6.5            |
| 30.0                   | 78161. | -54.6                        |                        |                      | 312.3                    | 10.1           |
| 25.0                   | 82002. | -53.2                        |                        |                      | 290.6                    | 11.6           |
| 20.0                   | 86737. | -51.5                        |                        |                      | 302.5                    | 21.2           |
| 15.0                   | 92871. | -49.6                        |                        |                      | 281.4                    | 19.3           |

\*\* AT LEAST ONE ASSUMED REL TIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

SIGNIFICANT LEVEL DATA

0500060027

S M R

TABLE 7

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 81  
ASCENSION NO. 27

| PRESSURE<br>MILLIBARS | GEOMET. IC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|-----------------------|------------------------------------|----------------|------------------------|----------------------|
|                       |                                    | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 888.9                 | 3997.3                             | 11.3           | -2.5                   | 38.0                 |
| 876.2                 | 4391.2                             | 10.5           | -6.2                   | 26.0                 |
| 859.4                 | 4923.9                             | 14.5           | -5.8                   | 24.0                 |
| 850.0                 | 5228.9                             | 14.6           | -5.7                   | 24.0                 |
| 821.6                 | 6171.0                             | 14.5           | -6.4                   | 23.0                 |
| 700.0                 | 10544.8                            | 6.0            | -15.8                  | 19.0                 |
| 601.5                 | 14577.3                            | -3.3           | -21.1                  | 19.0                 |
| 500.0                 | 19316.8                            | -13.7          | -32.3                  | 19.0                 |
| 469.0                 | 20902.4                            | -18.4          | -35.7                  | 20.0                 |
| 438.4                 | 22548.7                            | -21.5          | -37.9                  | 21.0                 |
| 400.0                 | 24744.2                            | -27.8          | -43.7                  | 20.0                 |
| 352.0                 | 27723.2                            | -35.0          | -49.5                  | 21.0                 |
| 322.9                 | 29690.3                            | -38.4          |                        |                      |
| 300.0                 | 31334.9                            | -44.2          |                        |                      |
| 280.3                 | 32823.8                            | -47.5          |                        |                      |
| 250.0                 | 35283.5                            | -53.0          |                        |                      |
| 225.5                 | 37450.9                            | -57.7          |                        |                      |
| 200.0                 | 39946.0                            | -57.7          |                        |                      |
| 192.0                 | 40800.0                            | -55.1          |                        |                      |
| 172.8                 | 42922.8                            | -60.0          |                        |                      |
| 161.2                 | 44413.1                            | -62.9          |                        |                      |
| 150.0                 | 45873.0                            | -63.5          |                        |                      |
| 122.8                 | 49925.6                            | -63.4          |                        |                      |
| 111.0                 | 51967.5                            | -64.5          |                        |                      |
| 105.9                 | 52925.6                            | -60.2          |                        |                      |
| 100.0                 | 54100.7                            | -61.9          |                        |                      |
| 87.0                  | 56905.2                            | -67.7          |                        |                      |
| 75.8                  | 59622.7                            | -70.7          |                        |                      |
| 70.0                  | 61191.6                            | -68.0          |                        |                      |
| 64.7                  | 62764.8                            | -65.1          |                        |                      |
| 53.6                  | 66545.8                            | -65.9          |                        |                      |
| 50.0                  | 67960.0                            | -60.0          |                        |                      |
| 43.2                  | 70973.0                            | -60.4          |                        |                      |
| 33.9                  | 75978.6                            | -59.4          |                        |                      |
| 30.0                  | 78534.4                            | -55.1          |                        |                      |
| 23.8                  | 83477.4                            | -50.5          |                        |                      |
| 20.0                  | 87225.9                            | -51.2          |                        |                      |
| 18.8                  | 88555.1                            | -52.0          |                        |                      |
| 17.1                  | 90577.6                            | -54.2          |                        |                      |
| 16.0                  | 91995.0                            | -52.5          |                        |                      |

GLODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
 0500060027  
 S M R  
 TABLE 7 cont'

STATION ALTITUDE 3997.30 FEET MSL  
 19 FEB. 81  
 ASCENSION NO. 27

| PRESSURE GEOMET IC | TEMPERATURE        | REL. HUM. |
|--------------------|--------------------|-----------|
| ALTITUDE           | AIR DEWPOINT       | PERCENT   |
| MILLIBARS MSL FEET | DEGREES CENTIGRADE |           |
| 15.2 93095.1       | -51.6              |           |
| 12.2 97868.4       | -47.2              |           |

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

UPPER AIR DATA  
0500060027  
S M R  
TABLE 8

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 81  
ASCENSION ILO. 27  
1000 HRS MST

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|--|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                                       |                      |  |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3997.3                            | 888.9                 | 11.3                          | -2.5                                  | 38.0                 | 1086.3                                 | 657.8                      | 0                        | 0              | 1.000266                  |
| 4000.0                            | 888.8                 | 11.3                          | -2.5                                  | 37.9                 | 1086.2                                 | 657.8                      | 347.1                    | 0              | 1.000266                  |
| 4500.0                            | 872.7                 | 11.3                          | -7.7                                  | 25.6                 | 1067.2                                 | 657.6                      | 347.1                    | 1.9            | 1.000254                  |
| 5000.0                            | 857.0                 | 14.5                          | -5.8                                  | 24.0                 | 1036.0                                 | 661.3                      | 347.1                    | 3.9            | 1.000249                  |
| 5500.0                            | 841.7                 | 14.6                          | -5.9                                  | 23.7                 | 1017.3                                 | 661.4                      | 347.1                    | 5.8            | 1.000245                  |
| 6000.0                            | 826.7                 | 14.5                          | -6.2                                  | 23.2                 | 999.4                                  | 661.3                      | 339.8                    | 6.7            | 1.000240                  |
| 6500.0                            | 811.8                 | 13.9                          | -7.1                                  | 22.7                 | 983.6                                  | 660.6                      | 326.1                    | 6.9            | 1.000236                  |
| 7000.0                            | 797.0                 | 12.9                          | -8.1                                  | 22.2                 | 969.2                                  | 659.4                      | 322.8                    | 7.1            | 1.000231                  |
| 7500.0                            | 782.6                 | 11.9                          | -9.2                                  | 21.8                 | 954.9                                  | 658.2                      | 322.3                    | 7.2            | 1.000227                  |
| 8000.0                            | 768.4                 | 10.9                          | -10.3                                 | 21.3                 | 940.9                                  | 657.1                      | 333.7                    | 5.5            | 1.000223                  |
| 8500.0                            | 754.4                 | 10.0                          | -11.4                                 | 20.9                 | 927.1                                  | 655.9                      | 355.3                    | 4.1            | 1.000219                  |
| 9000.0                            | 740.7                 | 9.0                           | -12.5                                 | 20.4                 | 913.5                                  | 654.8                      | 47.2                     | 2.4            | 1.000215                  |
| 9500.0                            | 727.3                 | 8.0                           | -13.6                                 | 20.0                 | 900.1                                  | 653.6                      | 100.8                    | 3.4            | 1.000211                  |
| 10000.0                           | 714.1                 | 7.1                           | -14.6                                 | 19.5                 | 886.9                                  | 652.5                      | 120.8                    | 3.5            | 1.000207                  |
| 10500.0                           | 701.1                 | 6.1                           | -15.7                                 | 19.0                 | 873.9                                  | 651.3                      | 131.0                    | 3.7            | 1.000203                  |
| 11000.0                           | 688.1                 | 5.3                           | -16.4                                 | 19.0                 | 860.1                                  | 650.4                      | 124.8                    | 3.4            | 1.000200                  |
| 11500.0                           | 675.3                 | 4.5                           | -17.1                                 | 19.0                 | 846.5                                  | 649.4                      | 115.6                    | 3.1            | 1.000196                  |
| 12000.0                           | 662.7                 | 3.7                           | -17.7                                 | 19.0                 | 833.1                                  | 648.5                      | 100.6                    | 2.8            | 1.000193                  |
| 12500.0                           | 650.4                 | 2.9                           | -18.4                                 | 19.0                 | 819.9                                  | 647.6                      | 61.2                     | 3.3            | 1.000190                  |
| 13000.0                           | 638.3                 | 2.2                           | -19.0                                 | 19.0                 | 807.0                                  | 646.7                      | 33.4                     | 6.1            | 1.000187                  |
| 13500.0                           | 626.4                 | 1.4                           | -19.7                                 | 19.0                 | 794.2                                  | 645.7                      | 28.6                     | 8.2            | 1.000183                  |
| 14000.0                           | 614.7                 | .6                            | -20.3                                 | 19.0                 | 781.7                                  | 644.8                      | 29.7                     | 9.2            | 1.000180                  |
| 14500.0                           | 603.3                 | -.2                           | -21.0                                 | 19.0                 | 769.3                                  | 643.9                      | 37.7                     | 8.8            | 1.000177                  |
| 15000.0                           | 591.7                 | -1.5                          | -22.1                                 | 19.0                 | 758.2                                  | 642.3                      | 54.6                     | 7.8            | 1.000174                  |
| 15500.0                           | 580.2                 | -2.9                          | -23.2                                 | 19.0                 | 747.5                                  | 640.6                      | 71.4                     | 8.1            | 1.000171                  |
| 16000.0                           | 569.0                 | -4.3                          | -24.4                                 | 19.0                 | 737.0                                  | 638.9                      | 84.3                     | 9.1            | 1.000169                  |
| 16500.0                           | 558.1                 | -5.7                          | -25.6                                 | 19.0                 | 726.6                                  | 637.2                      | 92.5                     | 10.1           | 1.000166                  |
| 17000.0                           | 547.3                 | -7.1                          | -26.8                                 | 19.0                 | 716.4                                  | 635.5                      | 98.6                     | 11.1           | 1.000163                  |
| 17500.0                           | 536.7                 | -8.6                          | -28.0                                 | 19.0                 | 706.4                                  | 633.8                      | 100.9                    | 11.6           | 1.000161                  |
| 18000.0                           | 526.3                 | -10.0                         | -29.2                                 | 19.0                 | 696.5                                  | 632.1                      | 102.4                    | 12.0           | 1.000158                  |
| 18500.0                           | 516.2                 | -11.4                         | -30.3                                 | 19.0                 | 686.7                                  | 630.4                      | 93.9                     | 11.9           | 1.000156                  |
| 19000.0                           | 506.2                 | -12.8                         | -31.5                                 | 19.0                 | 677.1                                  | 628.7                      | 85.0                     | 12.0           | 1.000153                  |
| 19500.0                           | 496.3                 | -14.2                         | -32.7                                 | 19.1                 | 667.6                                  | 626.9                      | 74.5                     | 12.1           | 1.000151                  |
| 20000.0                           | 486.4                 | -15.7                         | -33.8                                 | 19.4                 | 658.1                                  | 625.1                      | 65.1                     | 12.7           | 1.000149                  |
| 20500.0                           | 476.7                 | -17.2                         | -34.8                                 | 19.7                 | 648.7                                  | 623.3                      | 61.5                     | 14.3           | 1.000146                  |
| 21000.0                           | 467.1                 | -18.6                         | -35.9                                 | 20.1                 | 639.1                                  | 621.6                      | 58.5                     | 15.9           | 1.000144                  |
| 21500.0                           | 457.7                 | -19.5                         | -36.5                                 | 20.4                 | 628.5                                  | 620.5                      | 55.7                     | 17.5           | 1.000142                  |
| 22000.0                           | 448.4                 | -20.5                         | -37.2                                 | 20.7                 | 616.0                                  | 619.3                      | 53.3                     | 19.2           | 1.000139                  |
| 22500.0                           | 439.3                 | -21.4                         | -37.8                                 | 21.0                 | 607.8                                  | 618.2                      | 50.2                     | 19.9           | 1.000137                  |
| 23000.0                           | 430.2                 | -22.8                         | -39.1                                 | 20.8                 | 598.5                                  | 616.5                      | 47.2                     | 20.6           | 1.000135                  |

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 61  
ASCENSION NO. 27

UPPER AIR DATA  
0500060027  
S M R  
TABLE 8 cont'

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |   |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 23500.0                           | 421.3                 | -24.2                                       | 20.6                 | 589.6                        | 614.7                      | 46.4                     | 20.8           | 1.000132                  |
| 24000.0                           | 412.6                 | -25.7                                       | 20.3                 | 580.7                        | 612.9                      | 46.4                     | 20.8           | 1.000130                  |
| 24500.0                           | 404.1                 | -27.1                                       | 20.1                 | 572.1                        | 611.1                      | 47.6                     | 20.5           | 1.000128                  |
| 25000.0                           | 395.6                 | -28.4                                       | 20.1                 | 563.1                        | 609.5                      | 50.0                     | 20.2           | 1.000126                  |
| 25500.0                           | 387.2                 | -29.6                                       | 20.3                 | 553.9                        | 608.0                      | 51.2                     | 19.9           | 1.000124                  |
| 26000.0                           | 379.0                 | -30.8                                       | 20.4                 | 544.8                        | 606.5                      | 51.5                     | 19.4           | 1.000122                  |
| 26500.0                           | 371.0                 | -32.0                                       | 20.6                 | 536.0                        | 604.9                      | 48.2                     | 19.1           | 1.000120                  |
| 27000.0                           | 363.1                 | -33.3                                       | 20.8                 | 527.2                        | 603.4                      | 41.6                     | 19.1           | 1.000118                  |
| 27500.0                           | 355.4                 | -34.5                                       | 20.9                 | 518.6                        | 601.9                      | 36.6                     | 19.0           | 1.000116                  |
| 28000.0                           | 347.8                 | -35.5                                       | 18.0**               | 509.7                        | 600.6                      | 33.0                     | 18.9           | 1.000114                  |
| 28500.0                           | 340.2                 | -36.3                                       | 12.7**               | 500.5                        | 599.5                      | 30.4                     | 18.9           | 1.000112                  |
| 29000.0                           | 332.8                 | -37.2                                       | 7.4**                | 491.4                        | 598.4                      | 30.1                     | 19.0           | 1.000110                  |
| 29500.0                           | 325.6                 | -38.1                                       | 2.0**                | 482.5                        | 597.3                      | 29.7                     | 19.1           | 1.000107                  |
| 30000.0                           | 318.5                 | -39.5                                       |                      | 474.8                        | 595.5                      | 28.4                     | 19.7           | 1.000106                  |
| 30500.0                           | 311.4                 | -41.3                                       |                      | 467.8                        | 593.3                      | 27.1                     | 20.2           | 1.000104                  |
| 31000.0                           | 304.5                 | -43.0                                       |                      | 461.0                        | 591.0                      | 23.6                     | 20.1           | 1.000103                  |
| 31500.0                           | 297.7                 | -44.6                                       |                      | 453.8                        | 589.0                      | 20.1                     | 20.1           | 1.000101                  |
| 32000.0                           | 291.0                 | -45.7                                       |                      | 445.7                        | 587.6                      | 15.2                     | 19.9           | 1.000099                  |
| 32500.0                           | 284.5                 | -46.8                                       |                      | 437.8                        | 586.1                      | 9.6                      | 19.9           | 1.000098                  |
| 33000.0                           | 278.0                 | -47.9                                       |                      | 430.0                        | 584.7                      | 3.6                      | 19.6           | 1.000096                  |
| 33500.0                           | 271.6                 | -49.0                                       |                      | 422.2                        | 583.2                      | 356.9                    | 18.7           | 1.000094                  |
| 34000.0                           | 265.4                 | -50.1                                       |                      | 414.5                        | 581.8                      | 349.4                    | 17.7           | 1.000092                  |
| 34500.0                           | 259.3                 | -51.2                                       |                      | 407.0                        | 580.3                      | 340.5                    | 15.6           | 1.000091                  |
| 35000.0                           | 253.3                 | -52.4                                       |                      | 399.7                        | 578.9                      | 329.2                    | 13.9           | 1.000089                  |
| 35500.0                           | 247.4                 | -53.5                                       |                      | 392.4                        | 577.4                      | 320.3                    | 12.8           | 1.000087                  |
| 36000.0                           | 241.6                 | -54.6                                       |                      | 385.1                        | 576.0                      | 310.9                    | 12.0           | 1.000086                  |
| 36500.0                           | 235.9                 | -55.6                                       |                      | 377.9                        | 574.6                      | 310.0                    | 11.5           | 1.000084                  |
| 37000.0                           | 230.4                 | -56.7                                       |                      | 370.8                        | 573.1                      | 316.0                    | 11.2           | 1.000083                  |
| 37500.0                           | 225.0                 | -57.7                                       |                      | 363.8                        | 571.8                      | 323.3                    | 11.0           | 1.000081                  |
| 38000.0                           | 219.6                 | -57.7                                       |                      | 355.1                        | 571.8                      | 333.0                    | 11.3           | 1.000079                  |
| 38500.0                           | 214.4                 | -57.7                                       |                      | 346.7                        | 571.8                      | 342.1                    | 11.8           | 1.000077                  |
| 39000.0                           | 209.3                 | -57.7                                       |                      | 338.4                        | 571.8                      | 335.6                    | 11.3           | 1.000075                  |
| 39500.0                           | 204.3                 | -57.7                                       |                      | 330.4                        | 571.8                      | 327.3                    | 10.8           | 1.000074                  |
| 40000.0                           | 199.5                 | -57.5                                       |                      | 322.3                        | 572.1                      | 307.7                    | 9.6            | 1.000072                  |
| 40500.0                           | 194.0                 | -56.0                                       |                      | 312.5                        | 574.1                      | 274.6                    | 10.0           | 1.000070                  |
| 41000.0                           | 190.2                 | -55.5                                       |                      | 304.4                        | 574.7                      | 250.8                    | 13.1           | 1.000068                  |
| 41500.0                           | 185.6                 | -56.7                                       |                      | 298.7                        | 573.2                      | 243.5                    | 16.2           | 1.000067                  |
| 42000.0                           | 181.2                 | -57.8                                       |                      | 293.2                        | 571.7                      | 239.7                    | 19.2           | 1.000065                  |
| 42500.0                           | 176.9                 | -58.9                                       |                      | 287.7                        | 570.2                      | 237.8                    | 22.1           | 1.000064                  |
| 43000.0                           | 172.7                 | -60.0                                       |                      | 282.3                        | 568.8                      | 244.2                    | 22.9           | 1.000063                  |

\*\* AT LEAST ONE ASSUMED REL TIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

UPPER AIR DATA  
0500060027  
S M R  
TABLE 8 cont'

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 81 1000 HRS MST  
ASCENSION NO. 27

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 43500.0                        | 168.6                 | -61.0  |                      | 276.8                        | 567.4                      | 250.1                                 | 24.0           | 1.000062                  |
| 44000.0                        | 164.5                 | -62.1  |                      | 271.5                        | 566.0                      | 256.3                                 | 24.5           | 1.000060                  |
| 44500.0                        | 160.5                 | -62.9  |                      | 266.0                        | 564.8                      | 266.0                                 | 23.0           | 1.000059                  |
| 45000.0                        | 156.6                 | -63.1  |                      | 259.8                        | 564.6                      | 276.5                                 | 22.3           | 1.000058                  |
| 45500.0                        | 152.8                 | -63.3  |                      | 253.7                        | 564.3                      | 286.0                                 | 22.5           | 1.000057                  |
| 46000.0                        | 149.1                 | -63.5  |                      | 247.7                        | 564.1                      | 294.5                                 | 23.9           | 1.000055                  |
| 46500.0                        | 145.4                 | -63.5  |                      | 241.6                        | 564.1                      | 309.3                                 | 26.1           | 1.000054                  |
| 47000.0                        | 141.9                 | -63.5  |                      | 235.7                        | 564.1                      | 311.5                                 | 29.3           | 1.000052                  |
| 47500.0                        | 138.4                 | -63.5  |                      | 230.0                        | 564.1                      | 310.9                                 | 32.8           | 1.000051                  |
| 48000.0                        | 135.0                 | -63.4  |                      | 224.3                        | 564.2                      | 310.3                                 | 36.3           | 1.000050                  |
| 48500.0                        | 131.8                 | -63.4  |                      | 218.9                        | 564.2                      | 310.6                                 | 39.4           | 1.000049                  |
| 49000.0                        | 128.5                 | -63.4  |                      | 213.5                        | 564.2                      | 311.0                                 | 42.4           | 1.000048                  |
| 49500.0                        | 125.4                 | -63.4  |                      | 208.3                        | 564.2                      | 311.8                                 | 45.1           | 1.000046                  |
| 50000.0                        | 122.3                 | -63.4  |                      | 203.2                        | 564.2                      | 314.2                                 | 46.7           | 1.000045                  |
| 50500.0                        | 119.4                 | -63.7  |                      | 198.5                        | 563.8                      | 316.4                                 | 48.3           | 1.000044                  |
| 51000.0                        | 116.4                 | -64.0  |                      | 193.9                        | 563.4                      | 318.8                                 | 47.7           | 1.000043                  |
| 51500.0                        | 113.6                 | -64.2  |                      | 189.4                        | 563.1                      | 321.7                                 | 45.4           | 1.000042                  |
| 52000.0                        | 110.8                 | -64.4  |                      | 184.9                        | 562.9                      | 325.0                                 | 43.2           | 1.000041                  |
| 52500.0                        | 108.1                 | -62.1  |                      | 178.5                        | 565.9                      | 325.1                                 | 38.1           | 1.000040                  |
| 53000.0                        | 105.5                 | -60.3  |                      | 172.7                        | 568.4                      | 324.2                                 | 32.4           | 1.000038                  |
| 53500.0                        | 103.0                 | -61.0  |                      | 169.1                        | 567.4                      | 322.8                                 | 26.8           | 1.000037                  |
| 54000.0                        | 100.5                 | -61.8  |                      | 165.6                        | 566.4                      | 309.7                                 | 21.3           | 1.000036                  |
| 54500.0                        | 98.0                  | -62.7  |                      | 162.3                        | 565.1                      | 289.5                                 | 17.6           | 1.000035                  |
| 55000.0                        | 95.6                  | -63.8  |                      | 159.1                        | 563.7                      | 267.6                                 | 16.6           | 1.000035                  |
| 55500.0                        | 93.3                  | -64.8  |                      | 156.0                        | 562.3                      | 257.4                                 | 16.6           | 1.000035                  |
| 56000.0                        | 91.0                  | -65.8  |                      | 152.9                        | 560.9                      | 247.5                                 | 17.1           | 1.000034                  |
| 56500.0                        | 88.8                  | -66.9  |                      | 149.9                        | 559.5                      | 241.5                                 | 17.6           | 1.000033                  |
| 57000.0                        | 86.6                  | -67.8  |                      | 146.9                        | 558.3                      | 247.4                                 | 16.8           | 1.000033                  |
| 57500.0                        | 84.4                  | -68.4  |                      | 143.6                        | 557.5                      | 253.8                                 | 16.3           | 1.000032                  |
| 58000.0                        | 82.3                  | -68.9  |                      | 140.4                        | 556.8                      | 260.7                                 | 15.6           | 1.000031                  |
| 58500.0                        | 80.2                  | -69.5  |                      | 137.2                        | 556.0                      | 269.0                                 | 14.4           | 1.000031                  |
| 59000.0                        | 78.2                  | -70.0  |                      | 134.2                        | 555.3                      | 278.5                                 | 13.5           | 1.000030                  |
| 59500.0                        | 76.3                  | -70.6  |                      | 131.2                        | 554.5                      | 280.1                                 | 12.9           | 1.000029                  |
| 60000.0                        | 74.4                  | -70.1  |                      | 127.5                        | 555.2                      | 294.9                                 | 12.0           | 1.000028                  |
| 60500.0                        | 72.5                  | -69.2  |                      | 123.8                        | 556.4                      | 302.7                                 | 11.2           | 1.000028                  |
| 61000.0                        | 70.7                  | -68.3  |                      | 120.2                        | 557.5                      | 310.8                                 | 10.8           | 1.000027                  |
| 61500.0                        | 68.9                  | -67.4  |                      | 116.7                        | 558.8                      | 311.2                                 | 10.8           | 1.000026                  |
| 62000.0                        | 67.2                  | -66.5  |                      | 113.3                        | 560.0                      | 311.7                                 | 10.8           | 1.000025                  |
| 62500.0                        | 65.6                  | -65.6  |                      | 110.0                        | 561.3                      | 312.2                                 | 10.9           | 1.000024                  |
| 63000.0                        | 63.9                  | -65.1  |                      | 107.1                        | 561.9                      | 314.5                                 | 10.6           | 1.000024                  |

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 81  
ASCENSION NO. 27

UPPER AIR DATA  
0500060027  
S M R  
TABLE 8 cont'

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEWPOINT<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION (TN)<br>DEGREES | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 63500.0                        | 62.4                  | -65.3   |                      | 104.5                        | 561.7                      | 317.2                                  | 10.4           | 1.000023                  |
| 64000.0                        | 60.8                  | -65.4   |                      | 102.0                        | 561.6                      | 319.9                                  | 10.2           | 1.000023                  |
| 64500.0                        | 59.3                  | -65.5   |                      | 99.5                         | 561.4                      | 321.4                                  | 10.0           | 1.000022                  |
| 65000.0                        | 57.9                  | -65.6   |                      | 97.1                         | 561.3                      | 321.8                                  | 10.0           | 1.000022                  |
| 65500.0                        | 56.5                  | -65.7   |                      | 94.8                         | 561.1                      | 322.2                                  | 9.9            | 1.000021                  |
| 66000.0                        | 55.1                  | -65.8   |                      | 92.5                         | 561.0                      | 322.4                                  | 9.9            | 1.000021                  |
| 66500.0                        | 53.7                  | -65.9   |                      | 90.3                         | 560.9                      | 322.1                                  | 9.9            | 1.000020                  |
| 67000.0                        | 52.4                  | -64.0   |                      | 87.3                         | 563.4                      | 321.8                                  | 10.0           | 1.000019                  |
| 67500.0                        | 51.1                  | -61.9   |                      | 84.3                         | 566.2                      | 321.6                                  | 10.1           | 1.000019                  |
| 68000.0                        | 49.9                  | -60.0   |                      | 81.6                         | 568.8                      | 322.2                                  | 10.5           | 1.000018                  |
| 68500.0                        | 48.7                  | -60.1   |                      | 79.6                         | 568.7                      | 323.3                                  | 11.1           | 1.000018                  |
| 69000.0                        | 47.5                  | -60.1   |                      | 77.7                         | 568.6                      | 324.2                                  | 11.7           | 1.000017                  |
| 69500.0                        | 46.4                  | -60.2   |                      | 75.9                         | 568.5                      | 324.8                                  | 12.2           | 1.000017                  |
| 70000.0                        | 45.3                  | -60.3   |                      | 74.1                         | 568.4                      | 320.6                                  | 9.4            | 1.000016                  |
| 70500.0                        | 44.2                  | -60.3   |                      | 72.4                         | 568.3                      | 312.9                                  | 6.7            | 1.000016                  |
| 71000.0                        | 43.1                  | -60.4   |                      | 70.6                         | 568.2                      | 295.7                                  | 4.3            | 1.000016                  |
| 71500.0                        | 42.1                  | -60.3   |                      | 68.9                         | 568.4                      | 258.9                                  | 3.0            | 1.000015                  |
| 72000.0                        | 41.1                  | -60.2   |                      | 67.2                         | 568.5                      | 251.7                                  | 3.0            | 1.000015                  |
| 72500.0                        | 40.1                  | -60.1   |                      | 65.6                         | 568.6                      | 244.7                                  | 3.0            | 1.000015                  |
| 73000.0                        | 39.2                  | -60.0   |                      | 64.0                         | 568.8                      | 238.1                                  | 3.1            | 1.000014                  |
| 73500.0                        | 38.2                  | -59.9   |                      | 62.4                         | 568.9                      | 239.5                                  | 3.2            | 1.000014                  |
| 74000.0                        | 37.3                  | -59.8   |                      | 60.9                         | 569.0                      | 276.2                                  | 3.3            | 1.000014                  |
| 74500.0                        | 36.4                  | -59.7   |                      | 59.4                         | 569.2                      | 301.0                                  | 4.5            | 1.000013                  |
| 75000.0                        | 35.5                  | -59.6   |                      | 58.0                         | 569.3                      | 314.0                                  | 6.1            | 1.000013                  |
| 75500.0                        | 34.7                  | -59.5   |                      | 56.6                         | 569.4                      | 319.2                                  | 7.5            | 1.000013                  |
| 76000.0                        | 33.9                  | -59.4   |                      | 55.2                         | 569.0                      | 316.7                                  | 7.6            | 1.000012                  |
| 76500.0                        | 33.1                  | -58.5   |                      | 53.7                         | 570.7                      | 314.4                                  | 7.7            | 1.000012                  |
| 77000.0                        | 32.3                  | -57.7   |                      | 52.2                         | 571.9                      | 312.1                                  | 7.9            | 1.000012                  |
| 77500.0                        | 31.5                  | -56.8   |                      | 50.8                         | 573.0                      | 309.8                                  | 8.0            | 1.000011                  |
| 78000.0                        | 30.8                  | -56.0   |                      | 49.4                         | 574.1                      | 309.0                                  | 8.7            | 1.000011                  |
| 78500.0                        | 30.0                  | -55.2   |                      | 48.0                         | 575.2                      | 308.5                                  | 9.6            | 1.000011                  |
| 79000.0                        | 29.4                  | -54.7   |                      | 46.8                         | 575.8                      | 308.1                                  | 10.4           | 1.000010                  |
| 79500.0                        | 28.7                  | -54.2   |                      | 45.6                         | 576.5                      | 307.7                                  | 11.3           | 1.000010                  |
| 80000.0                        | 28.0                  | -53.7   |                      | 44.5                         | 577.1                      | 307.4                                  | 12.1           | 1.000010                  |
| 80500.0                        | 27.4                  | -53.3   |                      | 43.4                         | 577.7                      | 306.9                                  | 12.2           | 1.000010                  |
| 81000.0                        | 26.7                  | -52.8   |                      | 42.3                         | 578.3                      | 306.4                                  | 12.3           | 1.000009                  |
| 81500.0                        | 26.1                  | -52.3   |                      | 41.2                         | 578.9                      | 305.9                                  | 12.4           | 1.000009                  |
| 82000.0                        | 25.5                  | -51.9   |                      | 40.2                         | 579.5                      | 305.4                                  | 12.5           | 1.000009                  |
| 82500.0                        | 24.9                  | -51.4   |                      | 39.1                         | 580.1                      | 304.4                                  | 12.6           | 1.000009                  |
| 83000.0                        | 24.3                  | -50.9   |                      | 38.2                         | 580.7                      | 302.3                                  | 12.8           | 1.000008                  |

STATION ALTITUDE 3997.30 FEET MSL  
 19 FEB. 81  
 ASCENSION NO. 27

UPPER AIR DATA  
 0500060027  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 8 cont'

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 83500.0                        | 23.8                  | -50.5                      |                      | 37.2                         | 581.3                      | 300.2                                 | 12.9           | 1.000008                  |
| 84000.0                        | 23.2                  | -50.6                      |                      | 36.4                         | 581.2                      | 298.1                                 | 13.0           | 1.000008                  |
| 84500.0                        | 22.7                  | -50.7                      |                      | 35.5                         | 581.1                      | 296.1                                 | 13.2           | 1.000008                  |
| 85000.0                        | 22.2                  | -50.8                      |                      | 34.7                         | 580.9                      | 292.4                                 | 13.3           | 1.000008                  |
| 85500.0                        | 21.7                  | -50.9                      |                      | 34.0                         | 580.8                      | 287.2                                 | 13.6           | 1.000008                  |
| 86000.0                        | 21.2                  | -51.0                      |                      | 33.2                         | 580.7                      | 282.2                                 | 14.1           | 1.000007                  |
| 86500.0                        | 20.7                  | -51.1                      |                      | 32.4                         | 580.6                      | 277.6                                 | 14.6           | 1.000007                  |
| 87000.0                        | 20.2                  | -51.2                      |                      | 31.7                         | 580.4                      | 273.2                                 | 15.2           | 1.000007                  |
| 87500.0                        | 19.7                  | -51.4                      |                      | 31.0                         | 580.2                      | 273.3                                 | 16.0           | 1.000007                  |
| 88000.0                        | 19.3                  | -51.7                      |                      | 30.3                         | 579.8                      | 275.4                                 | 17.0           | 1.000007                  |
| 88500.0                        | 18.8                  | -52.0                      |                      | 29.7                         | 579.4                      | 277.3                                 | 17.9           | 1.000007                  |
| 89000.0                        | 18.4                  | -52.5                      |                      | 29.1                         | 578.7                      | 279.0                                 | 18.9           | 1.000006                  |
| 89500.0                        | 18.0                  | -53.0                      |                      | 28.5                         | 578.0                      | 281.1                                 | 19.9           | 1.000006                  |
| 90000.0                        | 17.6                  | -53.6                      |                      | 27.9                         | 577.3                      | 286.7                                 | 20.7           | 1.000006                  |
| 90500.0                        | 17.2                  | -54.1                      |                      | 27.3                         | 576.6                      | 291.8                                 | 21.8           | 1.000006                  |
| 91000.0                        | 16.8                  | -53.7                      |                      | 26.6                         | 577.1                      | 296.4                                 | 22.9           | 1.000006                  |
| 91500.0                        | 16.4                  | -53.1                      |                      | 25.9                         | 577.9                      | 300.5                                 | 24.2           | 1.000006                  |
| 92000.0                        | 16.0                  | -52.5                      |                      | 25.3                         | 578.7                      | 303.1                                 | 25.1           | 1.000006                  |
| 92500.0                        | 15.6                  | -52.1                      |                      | 24.6                         | 579.2                      | 305.3                                 | 25.8           | 1.000005                  |
| 93000.0                        | 15.3                  | -51.7                      |                      | 24.0                         | 579.8                      | 307.3                                 | 26.5           | 1.000005                  |
| 93500.0                        | 14.9                  | -51.2                      |                      | 23.4                         | 580.4                      | 309.2                                 | 27.3           | 1.000005                  |
| 94000.0                        | 14.6                  | -50.8                      |                      | 22.8                         | 581.0                      |                                       |                | 1.000005                  |
| 94500.0                        | 14.2                  | -50.3                      |                      | 22.3                         | 581.6                      |                                       |                | 1.000005                  |
| 95000.0                        | 13.9                  | -49.8                      |                      | 21.7                         | 582.2                      |                                       |                | 1.000005                  |
| 95500.0                        | 13.6                  | -49.4                      |                      | 21.2                         | 582.8                      |                                       |                | 1.000005                  |
| 96000.0                        | 13.3                  | -48.9                      |                      | 20.7                         | 583.4                      |                                       |                | 1.000005                  |
| 96500.0                        | 13.0                  | -48.5                      |                      | 20.1                         | 584.0                      |                                       |                | 1.000004                  |
| 97000.0                        | 12.7                  | -48.0                      |                      | 19.6                         | 584.6                      |                                       |                | 1.000004                  |
| 97500.0                        | 12.4                  | -47.5                      |                      | 19.2                         | 585.2                      |                                       |                | 1.000004                  |

STATION ALTITUDE 3997.30 FEET MSL  
19 FEB. 01  
1000 HRS MST  
A5751500 NO. 27

MANDATORY LEVELS  
0500060027  
S M R  
TABLE 9

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM. |                          | WIND DATA      |  |
|-----------------------|--------|----------------|------------------------|-----------|--------------------------|----------------|--|
| MILLIBARS             | FLEET  | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE | PERCENT   | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |  |
| 850.0                 | 5225.  | 14.6           | -5.7                   | 24.       | 347.1                    | 4.8            |  |
| 800.0                 | 6902.  | 13.1           | -7.9                   | 22.       | 322.9                    | 7.1            |  |
| 750.0                 | 8669.  | 9.7            | -11.7                  | 21.       | 6.7                      | 3.2            |  |
| 700.0                 | 10534. | 6.0            | -15.8                  | 19.       | 130.5                    | 3.7            |  |
| 650.0                 | 12513. | 2.9            | -18.4                  | 19.       | 59.2                     | 3.4            |  |
| 600.0                 | 14626. | -5.5           | -21.2                  | 19.       | 41.9                     | 6.5            |  |
| 550.0                 | 16880. | -6.8           | -26.5                  | 19.       | 97.4                     | 10.9           |  |
| 500.0                 | 19289. | -13.7          | -32.3                  | 19.       | 78.5                     | 12.0           |  |
| 450.0                 | 21880. | -20.3          | -37.0                  | 21.       | 53.7                     | 18.9           |  |
| 400.0                 | 24703. | -27.8          | -43.7                  | 20.       | 48.0                     | 20.4           |  |
| 350.0                 | 27803. | -35.2          | -50.2                  | 20.**     | 34.1                     | 18.9           |  |
| 300.0                 | 31273. | -44.2          |                        |           | 21.5                     | 20.1           |  |
| 250.0                 | 35207. | -53.0          |                        |           | 324.3                    | 13.3           |  |
| 200.0                 | 39850. | -57.7          |                        |           | 312.4                    | 9.9            |  |
| 175.0                 | 42624. | -59.4          |                        |           | 240.6                    | 22.4           |  |
| 150.0                 | 45750. | -63.5          |                        |           | 296.2                    | 23.4           |  |
| 125.0                 | 49424. | -63.4          |                        |           | 312.0                    | 45.2           |  |
| 100.0                 | 53934. | -61.9          |                        |           | 307.2                    | 20.6           |  |
| 80.0                  | 58371. | -69.5          |                        |           | 269.6                    | 14.3           |  |
| 70.0                  | 60983. | -68.0          |                        |           | 310.9                    | 10.8           |  |
| 60.0                  | 64052. | -65.4          |                        |           | 321.2                    | 10.1           |  |
| 50.0                  | 67706. | -60.0          |                        |           | 322.1                    | 10.4           |  |
| 40.0                  | 72272. | -60.1          |                        |           | 244.4                    | 3.0            |  |
| 30.0                  | 78201. | -55.1          |                        |           | 308.5                    | 9.6            |  |
| 25.0                  | 82053. | -51.5          |                        |           | 305.0                    | 12.6           |  |
| 20.0                  | 86020. | -51.2          |                        |           | 271.8                    | 15.4           |  |
| 15.0                  | 92918. | -51.3          |                        |           | 308.5                    | 27.0           |  |

\*\* AT LEAST ONE ASSUMED REL TIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
32.88865 LAT N  
106.09965 LON E

SIGNIFICANT LEVEL DATA  
0500010031  
HOLLOMAN

STATION ALTITUDE 4126.59 FEET MSL  
19 FEB. 81  
ASCENSION NO. 31

TABLE 10

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE     |                        | REL. HUM.<br>PERCENT |
|--|-----------------|------------------------|----------------------|
|  | AIR<br>DEGREE'S | DEWPOINT<br>CENTIGRADE |                      |
| 803.2  | 18.5            | -3.0                   | 23.0                 |
| 873.6  | 18.1            | -3.3                   | 23.0                 |
| 850.0  | 15.0            | -2.4                   | 30.0                 |
| 904.2  | 11.1            | -5.4                   | 31.0                 |
| 774.4  | 10.9            | -9.4                   | 23.0                 |
| 754.2  | 10.4            | -10.4                  | 22.0                 |
| 700.0  | 5.5             | -13.9                  | 23.0                 |
| 686.8  | 6.1             | -14.0                  | 22.0                 |
| 649.6  | 3.0             | -17.1                  | 21.0                 |
| 631.2  | 2.5             | -18.1                  | 20.0                 |
| 568.6  | -4.4            | -22.4                  | 23.0                 |
| 504.5  | -12.2           | -29.5                  | 22.0                 |
| 500.0  | -13.9           | -30.5                  | 23.0                 |
| 400.0  | -28.1           | -39.6                  | 32.0                 |
| 392.2  | -28.2           | -40.3                  | 30.0                 |
| 330.1  | -38.8           | -49.7                  | 30.0                 |
| 300.0  | -44.7           |                        |                      |
| 279.0  | -48.0           |                        |                      |
| 250.0  | -52.0           |                        |                      |
| 244.2  | -54.1           |                        |                      |
| 211.8  | -59.4           |                        |                      |
| 200.0  | -58.6           |                        |                      |
| 181.8  | -57.0           |                        |                      |
| 159.0  | -62.1           |                        |                      |
| 150.0  | -62.7           |                        |                      |
| 129.0  | -63.6           |                        |                      |
| 117.2  | -63.8           |                        |                      |
| 109.6  | -64.8           |                        |                      |
| 105.8  | -61.8           |                        |                      |
| 100.0  | -60.7           |                        |                      |
| 77.6   | -68.8           |                        |                      |
| 72.7   | -66.8           |                        |                      |
| 71.2   | -69.0           |                        |                      |
| 70.0   | -67.8           |                        |                      |
| 68.0   | -65.1           |                        |                      |
| 64.8   | -65.9           |                        |                      |
| 50.0   | -61.4           |                        |                      |
| 40.2   | -59.3           |                        |                      |
| 30.0   | -53.4           |                        |                      |
| 26.9   | -50.0           |                        |                      |

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

SIGNIFICANT LEVEL DATA  
 0500010031  
 HOLLOWMAN

STATION ALTITUDE 4126.59 FEET MSL  
 19 FEB. 61 1050 HRS MST  
 ASCENSION NO. 31

TABLE 10 cont'

| PRESSURE<br>MILLIBARS | GEOMETRIC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
|                       |                                   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 20.0                  | 87364.4                           | -51.7          |                        |                      |
| 17.1                  | 90729.0                           | -51.6          |                        |                      |
| 13.4                  | 96062.7                           | -43.7          |                        |                      |
| 10.6                  | 101323.6                          | -40.1          |                        |                      |

STATION ALTITUDE 4126.59 FEET MSL  
10 FEB. 61 1050 HRS MST  
ASCENSION NO. 31

UPPER AIR DATA  
0509010031  
HOLLOMAN  
TABLE 11

GEODETTIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CURIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | WIND DATA<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------------------|-----------------------------|---------------------------|
| 4126.6                            | 883.2                 | 18.5  | 23.0                 | 1052.7                       | 666.0                      | 290.0                                 | 5.1                         | 1.000256                  |
| 4500.0                            | 871.5                 | 17.8  | 23.6                 | 1041.2                       | 665.2                      | 308.7                                 | 5.4                         | 1.000254                  |
| 5000.0                            | 856.1                 | 15.8  | 28.2                 | 1029.8                       | 663.0                      | 328.0                                 | 6.5                         | 1.000252                  |
| 5500.0                            | 840.8                 | 14.2  | 30.2                 | 1016.9                       | 661.2                      | 340.6                                 | 8.2                         | 1.000249                  |
| 6000.0                            | 825.7                 | 13.0  | 30.5                 | 1003.2                       | 659.6                      | 347.7                                 | 9.6                         | 1.000245                  |
| 6500.0                            | 810.8                 | 11.7  | 30.9                 | 989.7                        | 658.1                      | 346.5                                 | 7.1                         | 1.000240                  |
| 7000.0                            | 796.2                 | 11.0  | 28.9                 | 974.2                        | 657.3                      | 344.1                                 | 4.6                         | 1.000235                  |
| 7500.0                            | 781.8                 | 11.0  | 25.0                 | 957.1                        | 657.2                      | 340.7                                 | 3.8                         | 1.000229                  |
| 8000.0                            | 767.6                 | 10.7  | 22.7                 | 940.7                        | 656.9                      | 338.7                                 | 3.6                         | 1.000223                  |
| 8500.0                            | 753.7                 | 10.4  | 22.0                 | 924.9                        | 656.4                      | 330.6                                 | 4.2                         | 1.000219                  |
| 9000.0                            | 739.9                 | 9.1   | 22.3                 | 911.9                        | 655.0                      | 334.4                                 | 3.0                         | 1.000215                  |
| 9500.0                            | 726.4                 | 7.9   | 22.5                 | 899.2                        | 653.6                      | 301.2                                 | 1.3                         | 1.000212                  |
| 10000.0                           | 713.1                 | 6.7   | 22.8                 | 886.6                        | 652.1                      | 215.9                                 | 2.3                         | 1.000208                  |
| 10500.0                           | 700.1                 | 5.5   | 23.0                 | 874.2                        | 650.7                      | 201.0                                 | 4.0                         | 1.000205                  |
| 11000.0                           | 687.2                 | 6.1   | 22.0                 | 856.3                        | 651.4                      | 199.4                                 | 4.3                         | 1.000201                  |
| 11500.0                           | 674.5                 | 5.1   | 21.7                 | 843.5                        | 650.2                      | 181.8                                 | 3.7                         | 1.000197                  |
| 12000.0                           | 662.0                 | 4.1   | 21.3                 | 831.1                        | 648.9                      | 127.4                                 | 3.9                         | 1.000194                  |
| 12500.0                           | 649.7                 | 3.0   | 21.0                 | 818.8                        | 647.7                      | 94.9                                  | 7.1                         | 1.000190                  |
| 13000.0                           | 637.6                 | 2.7   | 20.4                 | 804.6                        | 647.3                      | 82.7                                  | 11.6                        | 1.000187                  |
| 13500.0                           | 625.7                 | 1.9   | 20.3                 | 791.7                        | 646.4                      | 79.3                                  | 14.0                        | 1.000183                  |
| 14000.0                           | 613.8                 | .7  | 20.8                 | 780.4                        | 644.9                      | 77.4                                  | 15.7                        | 1.000181                  |
| 14500.0                           | 602.2                 | -6  | 21.3                 | 769.2                        | 643.4                      | 77.7                                  | 14.7                        | 1.000178                  |
| 15000.0                           | 590.9                 | -1.9  | 21.9                 | 758.2                        | 641.9                      | 77.7                                  | 13.5                        | 1.000175                  |
| 15500.0                           | 579.7                 | -3.1  | 22.4                 | 747.4                        | 640.4                      | 75.0                                  | 10.9                        | 1.000172                  |
| 16000.0                           | 568.8                 | -4.4  | 23.0                 | 736.7                        | 638.9                      | 70.4                                  | 8.5                         | 1.000169                  |
| 16500.0                           | 557.7                 | -5.7  | 22.8                 | 725.9                        | 637.4                      | 60.8                                  | 6.2                         | 1.000167                  |
| 17000.0                           | 546.9                 | -6.9  | 22.7                 | 715.3                        | 635.8                      | 45.4                                  | 4.4                         | 1.000164                  |
| 17500.0                           | 536.3                 | -8.2  | 22.5                 | 704.8                        | 634.3                      | 32.8                                  | 3.4                         | 1.000161                  |
| 18000.0                           | 525.9                 | -9.5  | 22.3                 | 694.5                        | 632.7                      | 20.3                                  | 3.0                         | 1.000158                  |
| 18500.0                           | 515.7                 | -10.8                                       | 22.2                 | 684.4                        | 631.2                      | 20.6                                  | 3.4                         | 1.000156                  |
| 19000.0                           | 505.7                 | -12.0                                       | 22.0                 | 674.4                        | 629.6                      | 26.4                                  | 4.4                         | 1.000153                  |
| 19500.0                           | 495.6                 | -14.5                                       | 23.4                 | 667.2                        | 626.7                      | 33.2                                  | 5.9                         | 1.000151                  |
| 20000.0                           | 485.5                 | -15.8                                       | 24.2                 | 656.9                        | 625.1                      | 39.4                                  | 7.8                         | 1.000149                  |
| 20500.0                           | 475.6                 | -17.1                                       | 25.0                 | 646.8                        | 623.5                      | 41.8                                  | 9.9                         | 1.000146                  |
| 21000.0                           | 465.9                 | -18.4                                       | 25.8                 | 636.9                        | 621.9                      | 36.4                                  | 12.3                        | 1.000144                  |
| 21500.0                           | 456.4                 | -19.7                                       | 26.7                 | 627.2                        | 620.3                      | 32.0                                  | 14.6                        | 1.000142                  |
| 22000.0                           | 447.1                 | -21.0                                       | 27.5                 | 617.6                        | 618.7                      | 26.3                                  | 16.4                        | 1.000139                  |
| 22500.0                           | 438.0                 | -22.3                                       | 28.3                 | 608.2                        | 617.1                      | 23.2                                  | 17.4                        | 1.000137                  |
| 23000.0                           | 429.1                 | -23.6                                       | 29.2                 | 599.0                        | 615.5                      | 22.5                                  | 17.1                        | 1.000135                  |
| 23500.0                           | 420.4                 | -24.9                                       | 30.0                 | 589.9                        | 613.8                      | 23.1                                  | 16.0                        | 1.000133                  |

UPPER AIR DATA  
0500010031  
HOLLOMAN

STATION ALTITUDE 4126.59 FEET MSL  
19 FEB. 81 1050 HRS MST  
ASCENSION NO. 31

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

TABLE 11 CONT'

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION (TN)<br>DEGREES | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 24000.0                        | 411.8                 | -26.2                      | -38.3                                 | 30.8                 | 580.9                        | 612.2                      | 26.2                                   | 13.8           | 1.000131                  |
| 24500.0                        | 403.4                 | -27.6                      | -39.2                                 | 31.7                 | 572.1                        | 610.6                      | 29.3                                   | 12.2           | 1.000129                  |
| 25000.0                        | 395.1                 | -28.2                      | -40.0                                 | 30.7                 | 561.7                        | 609.8                      | 31.5                                   | 11.3           | 1.000126                  |
| 25500.0                        | 386.7                 | -29.1                      | -41.1                                 | 30.0                 | 551.8                        | 608.7                      | 32.2                                   | 11.5           | 1.000124                  |
| 26000.0                        | 378.4                 | -30.4                      | -42.3                                 | 30.0                 | 543.0                        | 607.0                      | 31.7                                   | 12.5           | 1.000122                  |
| 26500.0                        | 370.3                 | -31.7                      | -43.4                                 | 30.0                 | 534.3                        | 605.3                      | 31.1                                   | 13.6           | 1.000120                  |
| 27000.0                        | 362.4                 | -33.1                      | -44.6                                 | 30.0                 | 525.7                        | 603.7                      | 30.5                                   | 14.7           | 1.000118                  |
| 27500.0                        | 354.6                 | -34.4                      | -45.8                                 | 30.0                 | 517.4                        | 602.0                      | 28.4                                   | 15.2           | 1.000116                  |
| 28000.0                        | 347.0                 | -35.7                      | -47.0                                 | 30.0                 | 509.1                        | 600.3                      | 26.2                                   | 15.6           | 1.000114                  |
| 28500.0                        | 339.6                 | -37.1                      | -48.2                                 | 30.0                 | 501.0                        | 598.6                      | 25.0                                   | 15.8           | 1.000112                  |
| 29000.0                        | 332.3                 | -38.4                      | -49.4                                 | 30.0                 | 493.1                        | 596.9                      | 24.1                                   | 16.0           | 1.000110                  |
| 29500.0                        | 325.0                 | -39.8                      | -52.1                                 | 25.1**               | 485.1                        | 595.2                      | 22.1                                   | 16.5           | 1.000108                  |
| 30000.0                        | 317.8                 | -41.1                      | -56.0                                 | 18.1**               | 477.2                        | 593.4                      | 19.6                                   | 17.1           | 1.000106                  |
| 30500.0                        | 310.8                 | -42.5                      | -61.0                                 | 11.1**               | 469.4                        | 591.6                      | 16.6                                   | 17.8           | 1.000105                  |
| 31000.0                        | 303.9                 | -43.9                      | -69.3                                 | 4.1**                | 461.8                        | 589.9                      | 12.4                                   | 18.3           | 1.000103                  |
| 31500.0                        | 297.1                 | -45.2                      |                                       |                      | 454.1                        | 588.2                      | 8.4                                    | 18.9           | 1.000101                  |
| 32000.0                        | 290.4                 | -46.5                      |                                       |                      | 446.2                        | 586.6                      | 3.1                                    | 19.4           | 1.000099                  |
| 32500.0                        | 283.8                 | -47.7                      |                                       |                      | 438.5                        | 585.0                      | 358.2                                  | 20.1           | 1.000098                  |
| 33000.0                        | 277.4                 | -48.8                      |                                       |                      | 430.6                        | 583.5                      | 354.3                                  | 20.0           | 1.000096                  |
| 33500.0                        | 271.0                 | -49.5                      |                                       |                      | 422.1                        | 582.6                      | 350.6                                  | 19.9           | 1.000094                  |
| 34000.0                        | 264.8                 | -50.2                      |                                       |                      | 413.7                        | 581.7                      | 349.3                                  | 19.4           | 1.000092                  |
| 34500.0                        | 258.7                 | -50.9                      |                                       |                      | 405.5                        | 580.7                      | 349.5                                  | 18.6           | 1.000090                  |
| 35000.0                        | 252.7                 | -51.7                      |                                       |                      | 397.5                        | 579.8                      | 350.8                                  | 17.8           | 1.000089                  |
| 35500.0                        | 246.9                 | -53.1                      |                                       |                      | 390.9                        | 577.9                      | 354.6                                  | 17.1           | 1.000087                  |
| 36000.0                        | 241.1                 | -54.6                      |                                       |                      | 384.2                        | 576.0                      | 358.8                                  | 16.5           | 1.000086                  |
| 36500.0                        | 235.4                 | -55.5                      |                                       |                      | 376.7                        | 574.8                      | 3.9                                    | 15.7           | 1.000084                  |
| 37000.0                        | 229.8                 | -56.4                      |                                       |                      | 369.3                        | 573.6                      | 9.6                                    | 15.0           | 1.000082                  |
| 37500.0                        | 224.4                 | -57.3                      |                                       |                      | 362.0                        | 572.4                      | 8.5                                    | 13.4           | 1.000081                  |
| 38000.0                        | 219.1                 | -58.1                      |                                       |                      | 354.9                        | 571.2                      | 6.7                                    | 11.8           | 1.000079                  |
| 38500.0                        | 213.9                 | -59.0                      |                                       |                      | 348.0                        | 570.1                      | 2.9                                    | 11.3           | 1.000078                  |
| 39000.0                        | 208.8                 | -59.2                      |                                       |                      | 339.9                        | 569.8                      | 358.5                                  | 11.0           | 1.000076                  |
| 39500.0                        | 203.8                 | -58.9                      |                                       |                      | 331.3                        | 570.3                      | 355.8                                  | 11.1           | 1.000074                  |
| 40000.0                        | 198.9                 | -58.5                      |                                       |                      | 322.9                        | 570.8                      | 355.3                                  | 11.4           | 1.000072                  |
| 40500.0                        | 194.2                 | -58.1                      |                                       |                      | 314.6                        | 571.3                      | 352.6                                  | 11.1           | 1.000070                  |
| 41000.0                        | 189.6                 | -57.7                      |                                       |                      | 306.5                        | 571.8                      | 328.1                                  | 7.5            | 1.000068                  |
| 41500.0                        | 185.1                 | -57.3                      |                                       |                      | 298.7                        | 572.4                      | 285.0                                  | 6.7            | 1.000067                  |
| 42000.0                        | 180.7                 | -57.2                      |                                       |                      | 291.5                        | 572.4                      | 257.7                                  | 10.1           | 1.000065                  |
| 42500.0                        | 176.3                 | -58.2                      |                                       |                      | 285.7                        | 571.2                      | 247.1                                  | 14.8           | 1.000064                  |
| 43000.0                        | 172.1                 | -59.1                      |                                       |                      | 280.1                        | 570.0                      | 245.5                                  | 18.8           | 1.000062                  |
| 43500.0                        | 168.0                 | -60.0                      |                                       |                      | 274.6                        | 568.8                      | 254.1                                  | 20.5           | 1.000061                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
19 FEB. 61 1050 HRS MST  
ASCENSION 140. 31

UPPER AIR DATA  
0500010031  
HOLLOWMAN  
TABLE 11 cont'

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 44000.0                        | 164.0                 | -60.9                      |                      | 269.2                        | 567.5                      | 261.4                                 | 22.6           | 1.000060                  |
| 44500.0                        | 160.0                 | -61.9                      |                      | 263.9                        | 566.3                      | 271.3                                 | 22.9           | 1.000059                  |
| 45000.0                        | 156.2                 | -62.3                      |                      | 258.0                        | 565.7                      | 281.4                                 | 23.6           | 1.000057                  |
| 45500.0                        | 152.4                 | -62.5                      |                      | 252.0                        | 565.4                      | 290.2                                 | 24.9           | 1.000056                  |
| 46000.0                        | 148.7                 | -62.8                      |                      | 246.2                        | 565.1                      | 297.9                                 | 26.7           | 1.000055                  |
| 46500.0                        | 145.1                 | -62.9                      |                      | 240.3                        | 564.9                      | 301.7                                 | 28.8           | 1.000054                  |
| 47000.0                        | 141.5                 | -63.0                      |                      | 234.7                        | 564.7                      | 299.5                                 | 31.3           | 1.000052                  |
| 47500.0                        | 138.1                 | -63.2                      |                      | 229.1                        | 564.5                      | 297.6                                 | 33.8           | 1.000051                  |
| 48000.0                        | 134.7                 | -63.3                      |                      | 223.7                        | 564.3                      | 301.4                                 | 37.6           | 1.000050                  |
| 48500.0                        | 131.4                 | -63.5                      |                      | 218.4                        | 564.1                      | 305.0                                 | 41.9           | 1.000049                  |
| 49000.0                        | 128.2                 | -63.6                      |                      | 213.2                        | 563.9                      | 308.8                                 | 45.4           | 1.000047                  |
| 49500.0                        | 125.1                 | -63.7                      |                      | 208.0                        | 563.9                      | 313.1                                 | 48.0           | 1.000046                  |
| 50000.0                        | 122.0                 | -63.7                      |                      | 203.0                        | 563.8                      | 316.6                                 | 50.6           | 1.000045                  |
| 50500.0                        | 119.1                 | -63.8                      |                      | 198.1                        | 563.7                      | 316.5                                 | 49.8           | 1.000044                  |
| 51000.0                        | 116.2                 | -63.9                      |                      | 193.4                        | 563.5                      | 316.4                                 | 49.0           | 1.000043                  |
| 51500.0                        | 113.3                 | -64.3                      |                      | 189.0                        | 563.0                      | 317.9                                 | 47.7           | 1.000042                  |
| 52000.0                        | 110.5                 | -64.7                      |                      | 184.7                        | 562.5                      | 319.7                                 | 46.4           | 1.000041                  |
| 52500.0                        | 107.8                 | -63.4                      |                      | 179.1                        | 564.2                      | 321.7                                 | 41.7           | 1.000040                  |
| 53000.0                        | 105.2                 | -61.7                      |                      | 173.4                        | 566.5                      | 324.3                                 | 35.9           | 1.000039                  |
| 53500.0                        | 102.7                 | -61.2                      |                      | 168.8                        | 567.1                      | 322.9                                 | 29.3           | 1.000038                  |
| 54000.0                        | 100.2                 | -60.7                      |                      | 164.4                        | 567.8                      | 313.7                                 | 22.2           | 1.000037                  |
| 54500.0                        | 97.8                  | -61.4                      |                      | 160.8                        | 566.9                      | 296.7                                 | 16.5           | 1.000036                  |
| 55000.0                        | 95.4                  | -62.2                      |                      | 157.5                        | 565.8                      | 274.7                                 | 17.3           | 1.000035                  |
| 55500.0                        | 93.0                  | -63.0                      |                      | 154.2                        | 564.7                      | 256.9                                 | 20.2           | 1.000034                  |
| 56000.0                        | 90.7                  | -63.8                      |                      | 151.0                        | 563.7                      | 251.5                                 | 22.6           | 1.000033                  |
| 56500.0                        | 88.5                  | -64.6                      |                      | 147.9                        | 562.6                      | 250.4                                 | 24.2           | 1.000033                  |
| 57000.0                        | 86.3                  | -65.4                      |                      | 144.8                        | 561.5                      | 250.7                                 | 24.7           | 1.000032                  |
| 57500.0                        | 84.2                  | -66.2                      |                      | 141.8                        | 560.5                      | 255.4                                 | 22.0           | 1.000032                  |
| 58000.0                        | 82.2                  | -67.0                      |                      | 138.8                        | 559.4                      | 261.2                                 | 19.6           | 1.000031                  |
| 58500.0                        | 80.2                  | -67.8                      |                      | 136.0                        | 558.3                      | 268.0                                 | 16.5           | 1.000030                  |
| 59000.0                        | 78.2                  | -68.6                      |                      | 133.1                        | 557.2                      | 277.6                                 | 13.5           | 1.000030                  |
| 59500.0                        | 76.3                  | -68.3                      |                      | 129.6                        | 557.6                      | 288.7                                 | 11.2           | 1.000029                  |
| 60000.0                        | 74.4                  | -67.5                      |                      | 125.9                        | 558.7                      | 292.2                                 | 10.0           | 1.000028                  |
| 60500.0                        | 72.5                  | -67.1                      |                      | 122.6                        | 559.2                      | 296.6                                 | 8.8            | 1.000027                  |
| 61000.0                        | 70.7                  | -68.5                      |                      | 120.4                        | 557.3                      | 301.4                                 | 9.4            | 1.000027                  |
| 61500.0                        | 68.9                  | -66.4                      |                      | 116.2                        | 560.2                      | 305.0                                 | 10.6           | 1.000026                  |
| 62000.0                        | 67.2                  | -65.3                      |                      | 112.7                        | 561.7                      | 308.0                                 | 11.9           | 1.000025                  |
| 62500.0                        | 65.6                  | -65.7                      |                      | 110.2                        | 561.1                      | 310.4                                 | 13.2           | 1.000025                  |
| 63000.0                        | 64.0                  | -65.7                      |                      | 107.4                        | 561.1                      | 312.4                                 | 14.6           | 1.000024                  |
| 63500.0                        | 62.4                  | -65.3                      |                      | 104.6                        | 561.7                      | 313.6                                 | 14.2           | 1.000023                  |

| STATION ALTITUDE 4126.59 FEET MSL<br>19 FEB. 81<br>ASCENSION NO. 31 |                       |                            |                      | UPPER AIR DATA<br>0500010031<br>HOLLOMAN |                            |                                       |                | GEODETIC COORDINATES<br>32.88865 LAT DEG<br>106.09965 LON DEG |  |  |  |
|---|-----------------------|----------------------------|----------------------|--|----------------------------|---------------------------------------|----------------|---|--|--|--|
| TABLE 11 cont'  |                       |                            |                      |  |                            |                                       |                |   |  |  |  |
| GEOMETRIC ALTITUDE<br>MSL FEET                                      | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER             | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION                                     |  |  |  |
| 64000.0   | 60.9                  | -64.8                      |                      | 101.9                                    | 562.3                      | 314.8                                 | 13.4           | 1.000023  |  |  |  |
| 64500.0   | 59.4                  | -64.4                      |                      | 99.2                                     | 562.9                      | 315.7                                 | 12.4           | 1.000022  |  |  |  |
| 65000.0   | 58.0                  | -64.0                      |                      | 96.6                                     | 563.5                      | 315.3                                 | 10.9           | 1.000022  |  |  |  |
| 65500.0   | 56.6                  | -63.5                      |                      | 94.0                                     | 564.0                      | 314.9                                 | 9.5            | 1.000021  |  |  |  |
| 66000.0   | 55.2                  | -63.1                      |                      | 91.5                                     | 564.6                      | 315.8                                 | 9.2            | 1.000020  |  |  |  |
| 66500.0   | 53.8                  | -62.7                      |                      | 89.1                                     | 565.2                      | 317.1                                 | 9.1            | 1.000020  |  |  |  |
| 67000.0   | 52.5                  | -62.3                      |                      | 86.8                                     | 565.8                      | 318.9                                 | 9.0            | 1.000019  |  |  |  |
| 67500.0   | 51.2                  | -61.8                      |                      | 84.5                                     | 566.3                      | 324.8                                 | 8.2            | 1.000019  |  |  |  |
| 68000.0   | 50.0                  | -61.4                      |                      | 82.3                                     | 566.9                      | 332.1                                 | 7.4            | 1.000018  |  |  |  |
| 68500.0   | 48.8                  | -61.2                      |                      | 80.2                                     | 567.2                      | 338.2                                 | 7.0            | 1.000018  |  |  |  |
| 69000.0   | 47.6                  | -60.9                      |                      | 78.2                                     | 567.5                      | 341.7                                 | 7.0            | 1.000017  |  |  |  |
| 69500.0   | 46.5                  | -60.7                      |                      | 76.2                                     | 567.8                      | 345.2                                 | 6.9            | 1.000017  |  |  |  |
| 70000.0   | 45.4                  | -60.5                      |                      | 74.3                                     | 568.2                      | 344.6                                 | 7.1            | 1.000017  |  |  |  |
| 70500.0   | 44.3                  | -60.2                      |                      | 72.5                                     | 568.5                      | 342.6                                 | 7.4            | 1.000016  |  |  |  |
| 71000.0   | 43.2                  | -60.0                      |                      | 70.6                                     | 568.8                      | 340.7                                 | 7.7            | 1.000016  |  |  |  |
| 71500.0   | 42.2                  | -59.8                      |                      | 68.9                                     | 569.1                      | 336.1                                 | 7.5            | 1.000015  |  |  |  |
| 72000.0   | 41.2                  | -59.5                      |                      | 67.1                                     | 569.4                      | 331.2                                 | 7.4            | 1.000015  |  |  |  |
| 72500.0   | 40.2                  | -59.3                      |                      | 65.5                                     | 569.7                      | 322.0                                 | 7.3            | 1.000015  |  |  |  |
| 73000.0   | 39.2                  | -58.8                      |                      | 63.8                                     | 570.4                      | 303.9                                 | 8.1            | 1.000014  |  |  |  |
| 73500.0   | 38.3                  | -58.3                      |                      | 62.1                                     | 571.0                      | 290.0                                 | 9.4            | 1.000014  |  |  |  |
| 74000.0   | 37.4                  | -57.9                      |                      | 60.5                                     | 571.6                      | 282.0                                 | 10.7           | 1.000013  |  |  |  |
| 74500.0   | 36.5                  | -57.4                      |                      | 59.0                                     | 572.3                      | 281.3                                 | 10.6           | 1.000013  |  |  |  |
| 75000.0   | 35.7                  | -56.9                      |                      | 57.5                                     | 572.9                      | 280.7                                 | 10.6           | 1.000013  |  |  |  |
| 75500.0   | 34.8                  | -56.4                      |                      | 56.0                                     | 573.5                      | 281.4                                 | 10.2           | 1.000012  |  |  |  |
| 76000.0   | 34.0                  | -55.9                      |                      | 54.6                                     | 574.2                      | 289.5                                 | 8.6            | 1.000012  |  |  |  |
| 76500.0   | 33.2                  | -55.5                      |                      | 53.2                                     | 574.8                      | 301.0                                 | 7.2            | 1.000012  |  |  |  |
| 77000.0   | 32.4                  | -55.0                      |                      | 51.8                                     | 575.4                      | 314.0                                 | 6.3            | 1.000012  |  |  |  |
| 77500.0   | 31.7                  | -54.5                      |                      | 50.5                                     | 576.1                      | 310.3                                 | 6.4            | 1.000011  |  |  |  |
| 78000.0   | 30.9                  | -54.0                      |                      | 49.2                                     | 576.7                      | 306.7                                 | 6.5            | 1.000011  |  |  |  |
| 78500.0   | 30.2                  | -53.5                      |                      | 47.9                                     | 577.3                      | 303.2                                 | 6.6            | 1.000011  |  |  |  |
| 79000.0   | 29.5                  | -52.9                      |                      | 46.7                                     | 578.2                      | 300.4                                 | 6.4            | 1.000010  |  |  |  |
| 79500.0   | 28.8                  | -52.1                      |                      | 45.4                                     | 579.2                      | 297.5                                 | 6.3            | 1.000010  |  |  |  |
| 80000.0   | 28.2                  | -51.4                      |                      | 44.2                                     | 580.1                      | 294.5                                 | 6.1            | 1.000010  |  |  |  |
| 80500.0   | 27.5                  | -50.7                      |                      | 43.1                                     | 581.1                      | 302.2                                 | 6.1            | 1.000010  |  |  |  |
| 81000.0   | 26.9                  | -50.0                      |                      | 42.0                                     | 582.0                      | 310.3                                 | 6.2            | 1.000009  |  |  |  |
| 81500.0   | 26.3                  | -50.1                      |                      | 41.0                                     | 581.8                      | 318.0                                 | 6.4            | 1.000009  |  |  |  |
| 82000.0   | 25.7                  | -50.3                      |                      | 40.1                                     | 581.6                      | 318.1                                 | 7.4            | 1.000009  |  |  |  |
| 82500.0   | 25.1                  | -50.4                      |                      | 39.2                                     | 581.4                      | 317.0                                 | 8.5            | 1.000009  |  |  |  |
| 83000.0   | 24.5                  | -50.5                      |                      | 38.3                                     | 581.3                      | 316.2                                 | 9.6            | 1.000009  |  |  |  |
| 83500.0   | 23.9                  | -50.7                      |                      | 37.5                                     | 581.1                      | 310.1                                 | 10.7           | 1.000008  |  |  |  |

| STATION ALTITUDE 4126.59 FEET MSL<br>19 FEB. 81 1050 HRS MST<br>ASCENSION NO. 31 |                       |  |                      | UPPER AIR DATA<br>0500010031<br>HOLLOMAN<br>TABLE 11 cont' |                            |                                     |                | GEODETTIC COORDINATES<br>32.88865 LAT DEG<br>106.09965 LON DEG |  |  |  |
|--|-----------------------|--|----------------------|--|----------------------------|-------------------------------------|----------------|--|--|--|--|
| GEOMETRIC ALTITUDE<br>MSL FEET   | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER                               | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION                                      |  |  |  |
| 84000.0  | 23.4                  | -50.8                                    |                      | 36.6   | 580.9                      | 300.5                               | 12.0           | 1.000008   |  |  |  |
| 84500.0  | 22.8                  | -50.9                                    |                      | 35.8   | 580.7                      | 292.9                               | 13.6           | 1.000008   |  |  |  |
| 85000.0  | 22.3                  | -51.1                                    |                      | 35.0   | 580.6                      | 287.3                               | 15.4           | 1.000008   |  |  |  |
| 85500.0  | 21.8                  | -51.2                                    |                      | 34.2   | 580.4                      | 286.7                               | 16.1           | 1.000008   |  |  |  |
| 86000.0  | 21.3                  | -51.3                                    |                      | 33.5   | 580.2                      | 286.3                               | 16.9           | 1.000007   |  |  |  |
| 86500.0  | 20.8                  | -51.5                                    |                      | 32.7   | 580.0                      | 285.8                               | 17.6           | 1.000007   |  |  |  |
| 87000.0  | 20.3                  | -51.6                                    |                      | 32.0   | 579.9                      | 287.9                               | 17.7           | 1.000007   |  |  |  |
| 87500.0  | 19.9                  | -51.7                                    |                      | 31.3   | 579.7                      | 291.9                               | 17.3           | 1.000007   |  |  |  |
| 88000.0  | 19.4                  | -51.7                                    |                      | 30.5   | 579.6                      | 296.0                               | 17.0           | 1.000007   |  |  |  |
| 88500.0  | 19.0                  | -51.7                                    |                      | 29.8   | 579.8                      | 299.9                               | 17.0           | 1.000007   |  |  |  |
| 89000.0  | 18.5                  | -51.7                                    |                      | 29.1   | 579.8                      | 301.1                               | 18.2           | 1.000006   |  |  |  |
| 89500.0  | 18.1                  | -51.6                                    |                      | 28.5   | 579.8                      | 302.2                               | 19.4           | 1.000006   |  |  |  |
| 90000.0  | 17.7                  | -51.6                                    |                      | 27.8   | 579.8                      | 303.1                               | 20.6           | 1.000006   |  |  |  |
| 90500.0  | 17.3                  | -51.6                                    |                      | 27.2   | 579.9                      | 303.4                               | 21.0           | 1.000006   |  |  |  |
| 91000.0  | 16.9                  | -51.2                                    |                      | 26.5   | 580.4                      | 303.3                               | 21.1           | 1.000006   |  |  |  |
| 91500.0  | 16.5                  | -50.5                                    |                      | 25.8   | 581.4                      | 303.2                               | 21.1           | 1.000006   |  |  |  |
| 92000.0  | 16.1                  | -49.7                                    |                      | 25.2   | 582.3                      | 303.2                               | 21.2           | 1.000006   |  |  |  |
| 92500.0  | 15.8                  | -49.0                                    |                      | 24.5   | 583.3                      | 303.6                               | 21.1           | 1.000005   |  |  |  |
| 93000.0  | 15.4                  | -48.2                                    |                      | 23.9   | 584.3                      | 304.1                               | 21.1           | 1.000005   |  |  |  |
| 93500.0  | 15.1                  | -47.5                                    |                      | 23.3   | 585.2                      | 304.5                               | 21.1           | 1.000005   |  |  |  |
| 94000.0  | 14.7                  | -46.8                                    |                      | 22.7   | 586.2                      | 303.1                               | 22.7           | 1.000005   |  |  |  |
| 94500.0  | 14.4                  | -46.0                                    |                      | 22.1   | 587.1                      | 301.3                               | 24.9           | 1.000005   |  |  |  |
| 95000.0  | 14.1                  | -45.3                                    |                      | 21.5   | 588.1                      | 299.8                               | 27.3           | 1.000005   |  |  |  |
| 95500.0  | 13.7                  | -44.5                                    |                      | 21.0   | 589.0                      | 298.3                               | 29.2           | 1.000005   |  |  |  |
| 96000.0  | 13.4                  | -43.8                                    |                      | 20.4   | 590.0                      | 295.9                               | 29.6           | 1.000005   |  |  |  |
| 96500.0  | 13.1                  | -43.4                                    |                      | 19.9   | 590.5                      | 293.7                               | 30.0           | 1.000004   |  |  |  |
| 97000.0  | 12.9                  | -43.1                                    |                      | 19.5   | 590.9                      | 291.5                               | 30.5           | 1.000004   |  |  |  |
| 97500.0  | 12.6                  | -42.7                                    |                      | 19.0   | 591.4                      | 288.4                               | 28.9           | 1.000004   |  |  |  |
| 98000.0  | 12.3                  | -42.4                                    |                      | 18.6   | 591.8                      | 284.1                               | 26.2           | 1.000004   |  |  |  |
| 98500.0  | 12.0                  | -42.0                                    |                      | 18.1   | 592.3                      | 278.8                               | 23.7           | 1.000004   |  |  |  |
| 99000.0  | 11.8                  | -41.7                                    |                      | 17.7   | 592.7                      |                                     |                | 1.000004   |  |  |  |
| 99500.0  | 11.5                  | -41.3                                    |                      | 17.3   | 593.1                      |                                     |                | 1.000004   |  |  |  |
| 100000.0   | 11.2                  | -41.0                                    |                      | 16.9   | 593.6                      |                                     |                | 1.000004   |  |  |  |
| 100500.0   | 11.0                  | -40.7                                    |                      | 16.5   | 594.0                      |                                     |                | 1.000004   |  |  |  |
| 101000.0   | 10.8                  | -40.3                                    |                      | 16.1   | 594.4                      |                                     |                | 1.000004   |  |  |  |

STATION ALTITUDE 4126.59 FEET MSL  
19 FEB. 81  
ASCENSION NO. 31

MANDATORY LEVELS  
0500010031  
HOLLOMAN  
TABLE 12

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE |                     | REL. HUM. |                       | WIND DATA   |  |
|-----------------------|--------|-------------|---------------------|-----------|-----------------------|-------------|--|
| MILLIBARS             | FEET   | AIR DEGREES | DEWPOINT CENTIGRADE | PERCENT   | DIRECTION DEGREES(TN) | SPEED KNOTS |  |
| 850.0                 | 5195.  | 15.0        | -2.4                | 30.       | 333.6                 | 7.1         |  |
| 800.0                 | 6865.  | 11.1        | -5.9                | 30.       | 344.9                 | 5.2         |  |
| 750.0                 | 8628.  | 10.0        | -10.6               | 22.       | 341.1                 | 4.3         |  |
| 700.0                 | 10493. | 5.5         | -13.9               | 23.       | 201.1                 | 4.0         |  |
| 650.0                 | 12475. | 3.0         | -17.1               | 21.       | 95.6                  | 6.9         |  |
| 600.0                 | 14590. | -8          | -20.1               | 21.       | 77.8                  | 14.5        |  |
| 550.0                 | 16844. | -6.6        | -24.3               | 23.       | 48.4                  | 4.7         |  |
| 500.0                 | 19258. | -13.9       | -30.5               | 23.       | 30.7                  | 5.2         |  |
| 450.0                 | 21850. | -20.6       | -34.5               | 27.       | 27.6                  | 15.9        |  |
| 400.0                 | 24667. | -28.1       | -39.6               | 32.       | 30.1                  | 11.8        |  |
| 350.0                 | 27772. | -35.2       | -46.5               | 30.       | 27.0                  | 15.5        |  |
| 300.0                 | 31227. | -44.7       |                     |           | 10.2                  | 18.7        |  |
| 250.0                 | 35157. | -52.0       |                     |           | 352.4                 | 17.5        |  |
| 200.0                 | 39794. | -58.6       |                     |           | 355.4                 | 11.3        |  |
| 175.0                 | 42557. | -58.5       |                     |           | 245.2                 | 16.2        |  |
| 150.0                 | 45699. | -62.7       |                     |           | 294.9                 | 25.9        |  |
| 125.0                 | 49377. | -63.7       |                     |           | 313.1                 | 48.0        |  |
| 100.0                 | 53879. | -60.7       |                     |           | 313.2                 | 22.0        |  |
| 80.0                  | 58358. | -67.8       |                     |           | 268.3                 | 16.4        |  |
| 70.0                  | 60990. | -67.8       |                     |           | 302.7                 | 9.8         |  |
| 60.0                  | 64066. | -64.6       |                     |           | 315.5                 | 13.0        |  |
| 50.0                  | 67748. | -61.4       |                     |           | 331.6                 | 7.4         |  |
| 40.0                  | 72312. | -59.2       |                     |           | 319.6                 | 7.4         |  |
| 30.0                  | 78307. | -53.4       |                     |           | 302.7                 | 6.5         |  |
| 25.0                  | 82198. | -50.4       |                     |           | 317.0                 | 8.5         |  |
| 20.0                  | 86960. | -51.7       |                     |           | 290.5                 | 17.4        |  |
| 15.0                  | 93111. | -47.4       |                     |           | 304.5                 | 21.1        |  |

\*\* AT LEAST ONE ASSUMED REL TIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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